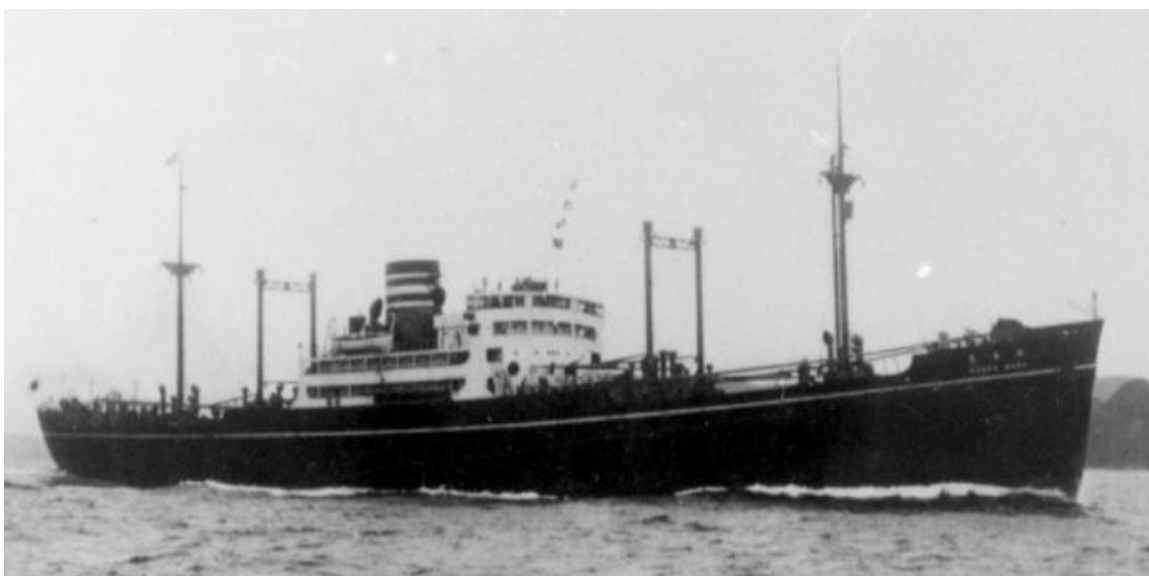


L'Espionage Magazine



IJN auxiliary ship the Asaka Maru

Volume Four: Spring 2022

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“[*proximity-fused*] antiaircraft fire, with the aid of automatic radar tracking, brought down more than 80 per cent of the robot bombs over England and most of the Japanese "kamikaze" airplanes over the Pacific.”

Henry Bonner

L'Espionage Welcomes Submissions

Obelisk Press of Vancouver is pleased to publish the Fourth edition of *L'Espionage Magazine*.

This edition of *L'Espionage Magazine* features the proximity fuse and how it helped to bring an early end to the Second World War. The Proximity Fuse help to neutralize the V-1 doddble bug as well as fight back the kamikaze in the Pacific, saving many allied ships and their crews. In one afternoon in the spring of 1945 over 150 kamikaze were shot down by three picket ships. In this edition of *L'Espionage Magazine* there is also an interview of Captain Jim Lovell from Apollo 13.

The *L'Espionage Magazine* board is comprised of the unpaid volunteers: Please feel free to send your short story, essays or article submissions to the Editor in Chief at

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There is no fee to submit. There is no writer's fee provided by the journal for those who submit. The publishing rights remain with the writer.

Articles about True Events

The Oslo Report by R. V. Jones

Chapter Eight

Most Secret War by R. V. Jones

To complete my report on the secret weapon, I had returned to London at the beginning of November and been given an office in No. 54 Broadway alongside Fred Winterbotham, who had instructed his secretary, Daisy Mowat, to ‘mother’ me. Daisy, now Lady Currie, typed all my early reports; and very well she did them. Her sense of mischief would occasionally lead her to incorporate a deliberate mistake, which had to be watched for; and there was one occasion later in the war when the Prime Minister’s Secretary telephoned and she told him that I was not available. By the time that I had retrieved the call from her extension I heard a grieved voice saying, ‘This is Peck, the Prime Minister’s Secretary—is that really Dr. Jones? I have just been talking to a most extraordinary lady who asserted that you had just jumped out of the window!’ With some presence of mind I replied, ‘Please don’t worry, it’s the only exercise that we can get.’ It was this light-hearted background that gave Churchill cause to write in *Their Finest Hour* that I thought that my first summons to his Cabinet Room might be a practical joke.

The Old Chief of M.I.6, Admiral ‘Quex’ Sinclair, had just died. He was succeeded by Stewart Menzies, who had previously been Head of Section V of M.I.6, but I was not to meet him for another year. The highest ranking officer that I did meet in the early days was the Vice-Chief, Claude Dansey. Various things, mainly uncomplimentary, have been written about Dansey,

but once again I had a stroke of fortune at the beginning of my dealings with him. Evidently he had heard that there was now a scientist in the office, and he quickly came to see me. He delighted in intrigue, and what he wanted me to do was, in this instance anyway, altruistic on his part. It involved finding employment for a deserving physicist in a Government establishment. Fortunately I was able to do so, and this initial success put me into Dansey's good books—a fact for which I was later to be very thankful.

Whilst on the subject of scientific recruitment, I might mention that at Bletchley I met one of the keepers in the botany department of the Natural History Museum who had volunteered for the Navy. Because there was a shortage of cryptographers, the three Services were asked whether there were any among their recruits who had a cryptographic background, and the museum keeper was one of those discovered in this way because he had described his occupation as that of a 'cryptogamic botanist'. When he told me this my comment had been, 'The silly idiots, they ought to have known that it meant that you had a secret wife!' He gave me a most curious look—it was some time afterwards that I discovered that although he was indeed married, he also maintained a clandestine ménage.

Just as I was finishing the secret weapon report one evening, Fred Winterbotham came into my room and dumped a small parcel on my desk and said, 'Here's a present for you!' I asked him what its background was and he said that it had come from our Naval Attaché in Oslo. This was after the Attaché had received a letter, dropped privately through his letterbox, saying that if the British would like to know about various German scientific and

technical developments, would we alter the preamble to our news broadcasts in German so as to say, ‘Hullo, hier ist London...’ instead of the normal preamble, and then our would-be helper would know that it was worth while to give us the information. The change had been duly made, and a package had then been put through the letterbox. It contained some seven pages of typewritten text and a sealed box. I can remember gingerly opening the box because it might easily have been a bomb, especially because of the extraordinary way in which it had appeared. But it turned out to be harmless, and inside there was a sealed glass tube, rather like an electronic valve which, in one sense, it was. It proved to be an electronic triggering device which, our correspondent said, had been developed so as to operate a proximity fuse in anti-aircraft shells. The principle of operation was that the shells were to be made in two electrically insulated halves, with suitable electronics to record the change in electrical capacitance between the halves whenever the shell was in the vicinity of a third body.

Besides the fuse and a description of its intended operation, there was a wide range of information, including the fact that the Junkers 88 was to be used as a dive-bomber. The German Navy was said to have developed remote-controlled rocket-driven gliders of about three metres span and three metres long, with radio control for launching by aircraft against enemy ships. The experimental establishment where this work was being carried out was Peenemünde—the first mention we had ever heard of this establishment.

The German Army was developing rocket projectiles of 80 centimetres calibre and stabilized by gyroscopes. The projectiles were not flying straight but in

uncontrollable curves, and were therefore to be equipped with radio remote control. The report mentioned Rechlin, the German equivalent of Farnborough, about which we already knew. It also told us that in the raid by Bomber Command on Wilhelmshafen in September, our aircraft had been detected at a range of 120 kilometres by radar stations with an output of 20 kilowatts. It did not state the wavelength, but suggested that we should find this for ourselves and jam the transmissions. There was another radar system using paraboloid aerials and operating on wavelengths of around 50 centimetres.

There was also a system for finding the range of a friendly bomber by transmitting a signal on a wavelength of 6 metres, which was modulated at a low frequency. This signal was received by the aircraft and returned to the observing station on a somewhat different radio frequency so that, from the phase lag in the returned modulation, the distance of the aircraft could be determined. The observing station could then transmit this information to the bomber, so that he could position himself relative to some pre-determined target.

Finally, the Oslo report told us about two new kinds of torpedo developed by the German Navy. One was controlled by radio for the first part of its journey and then switched to acoustic homing with microphones on the head of the torpedo so that it could steer itself towards the ship by listening to the noise of its engines. The second type of torpedo had a magnetic fuse, and the writer of the report speculated that it was these torpedoes that had sunk the Royal Oak in Scapa Flow.

The report was obviously written by someone with a good scientific and technical background, and quite different from anything that I had so far seen in Intelligence. My first step was to take the electronic trigger tube down to my former colleagues at the Admiralty Research Laboratory, to get them to evaluate its performance. The report itself was circulated to the three Service Ministries, but nobody would take it seriously. The leading doubter was John Buckingham, the Deputy Director of Scientific Research at the Admiralty. When I tried to convince him he implied that I was an innocent in Intelligence work, and that the whole thing was a ‘plant’. His argument was that the German hoaxers had overdone it, because it was very unlikely that any one man in Germany could have had such a comprehensive knowledge of developments in so many different fields. When I pointed out that at least some of the information was genuine, he said this was an old trick (as indeed it was) in which you give your victim something genuine that you know that he already knows, in the hope of convincing him that the rest of the report, which contains the hoax, is genuine. I pointed out that this was quite a remarkable hoax, since by now A.R.L. had found that the electronic tube was much better than anything that we had made in the same line, but I could not convince him. The report was thereafter disregarded in the Ministries, which did not even keep their copies, and all I could do was to keep my own copy and use it as a basis for much of my thought.

The value of the Oslo report was to become evident as the war proceeded, as it will in this book. I gave it publicity in my post-war lecture to the Royal United Services Institution on 19th February 1947, partly in the hope that

whoever had written it would come forward if he had survived the war. But despite worldwide publicity, the only response I had was from the former Naval Attaché in Oslo, Hector Boyes, who was now a Rear Admiral. His letter said:

I was very much interested to read in The Times a résumé of your lecture at the United Services Institution.

Whilst serving as Naval Attaché Oslo I remember receiving the German letters.

At that period one was inundated with various anonymous correspondence which it was necessary to sift.

On translating the German correspondence there appeared to be matters of interest though one had a certain mistrust, the letters having been posted in Norway.

On arrival home after the evacuation I asked about the correspondence without much result. I forgot about it, having been appointed to Japan. Your lecture shows that the writer was genuine—Is there any chance of his being Norwegian? At one period I was in touch with a Norwegian engineer who had been working in Germany on U and E boats.

One thing against it being him is that the letters were written in excellent German.

It confirms the lack of interest that had been shown in the Ministries—unfortunately my position in 1940 after the Norwegian evacuation was too obscure for Captain Boyes and me to have met.

Inevitably, the question will be asked regarding my own ideas about the identity of the Oslo author. I believe that I know, but the way in which his identity was revealed to me was so extraordinary that it may well not be credited. In any event, it belongs to a later period, and the denouement must wait till then.

The Proximity Fuse by Henry M. Bonner

From Electrical Engineering

September, 1947

One of the most closely guarded technical secrets of World War II, the proximity fuse was developed to counteract the natural defenses of both the airplane and the infantry. This review of the conception, the construction, and use of the fuse reveals how almost 100 per cent accuracy was built into the artillery of the Allies in World War II.

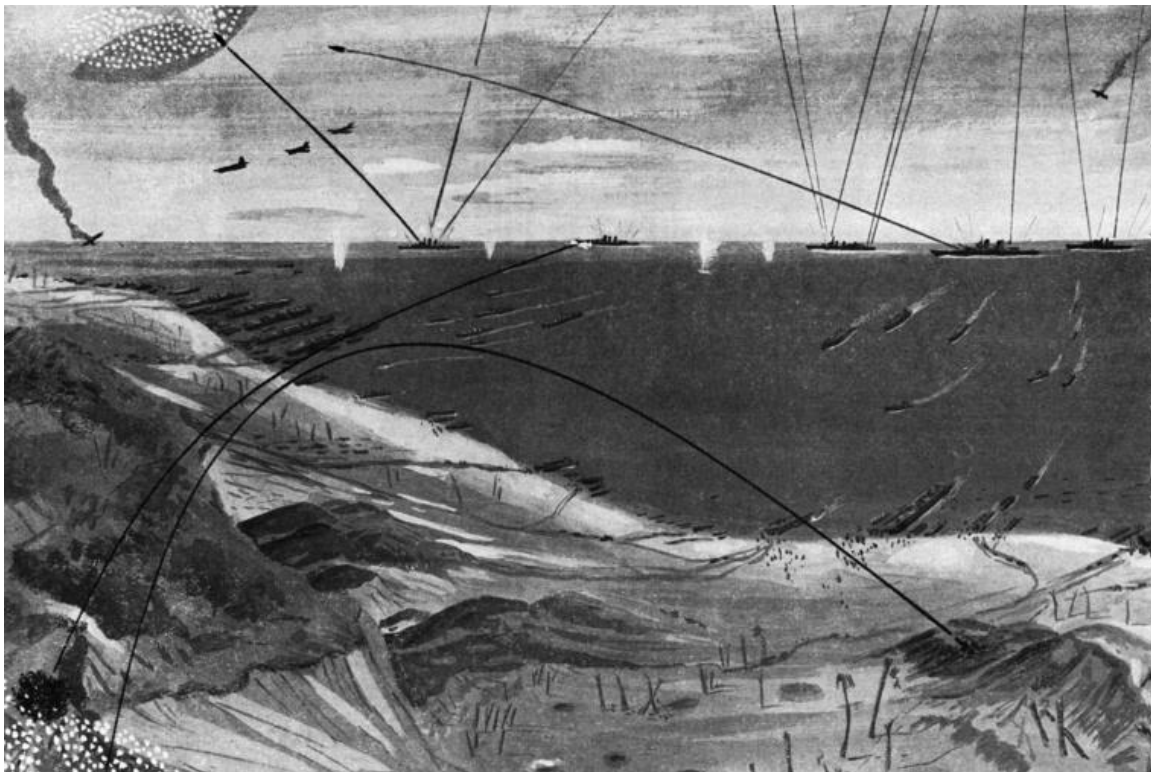


Fig. 1. The VT fuse as used for antiaircraft fire and against protected enemy personnel. The fan-shaped area indicates the effective field for

fuse action; the dotted areas indicate shrapnel bursts. The proximity field was designed to coincide with the burst patterns.

The theme has been expanded that for every weapon there exists a counterweapon, and this fact has been as true in the recent war as in any other. In history, each time a more deadly weapon has been introduced in warfare, another weapon, or a defense, has been developed to nullify its initial advantage. Before the invention of gunpowder, the shield and the suit of armor were partial defenses against the spear and the long bow; but these finally were pierced by the explosively propelled bullet, and the fortifications of the medieval castle crumbled at the impact of the cannon.

A weapon new to the First World War was the airplane, opposed by other airplanes and by antiaircraft fire from the ground. In World War II the airplane, although still bound to the earth's atmosphere, was brought, from our present point of view, to a high degree of perfection and of effectiveness. That effectiveness, however, was limited drastically by the development of more efficient techniques of antiaircraft defense, including radar tracking of the target and the proximity fuses.

The Proximity Fuse

The proximity fuse, as a method of projectile control, also has limited the usefulness as a defense of a simple hole in the ground, the much publicized foxhole of World War II. Both the airplane and the bank of earth, one an offensive weapon, the other a defensive one, have been counteracted by an

idea made practical by Anglo-American scientists and American industry. The idea demanded the building of a radio transmitter and receiver, small enough to be mounted, along with its energizer or battery, in the front end of a high-explosive projectile, and strong enough to withstand the shock of being fired from a gun at 20,000 times the acceleration of gravity.

Limitations of a Mechanical Fuse

In antiaircraft use the limitations of a mechanical time fuse, which must be set before firing and which must employ absolutely uniform powder charges, are readily evident. Even though a device had been developed to set the mechanical time fuses automatically on the basis of information supplied by the gun director, the positive action of a proximity field fuse had the advantage of eliminating the necessity of setting the fuse and made its action independent of gun charge or inaccuracies in the mechanical timing mechanism.

For howitzer use, proper adjustment of timed fire requires the firing of about 15 experimental rounds to obtain air and ground bursts, so that the fuse setting can be determined. Valuable time and ammunition are wasted with this procedure, and the enemy is warned to retire from the target area before the fire becomes effective.

Proximity fuses in this application have made foxholes and trenches untenable and have destroyed the protection of revetments. With the proximity fuse, uniform bursts 20 or 30 feet above the ground can scatter a deadly hail of fragments over the surrounding terrain from the first round. The fuses thus

have increased the efficacy of missiles from 10 to 20 times. If one fighter can punch ten per cent harder than his opponent the fight is won; if he can punch ten times as hard ...

German Research

Enemy interest in a proximity fuse was shown in the 1942 spy trials which disclosed that the Nazis were trying to find out whether the Allies possessed such a device. Only too well aware of the potentialities of a proximity fuse, the Germans themselves had started work on the idea as early as 1930; but no design ever was put into quantity production. A multiplicity of fuse types and of groups working on them, combined with a lack of cooperation between the respective groups and between the civilian groups and the military, led to the failure of their program. The Germans were working on acoustic, electrostatic, radio, and 30 other types of fuses, which incidentally were considered only for rockets and bombs. Apparently no German was fool enough to consider firing radio tubes from a gun. For this combination of reasons the Germans were well behind the Allies in their program.

Anglo-American Approach

In the United States, the National Defense Research Council, later the Office of Scientific Research and Development (OSRD) was requested to investigate the possibilities of making a proximity fuse, and the attack was conducted along two independent lines with the purpose of simplifying the question of supply and of administration. The Navy sponsored the development and

procurement for both services, and for the British, of fuses for howitzer, antiaircraft, and heavy rifle use (75 to 240 millimeters—anything between about 3 and 10 inches); the Army undertook the same problem for all bomb and rocket type fuses. These fuses were known as VT fuses by the Navy and POZIT fuses by the Army.

Two approaches were considered and developed successfully, although only the second of these actually was put into large scale production or use:

1. Pulse fuse.
2. Radio or proximity field fuse.

The first of these fuses is controlled remotely from the ground by radio. When shell and target are observed to be coincident on a radar screen, the fuse is activated and the explosive detonated. The second and most important fuse type radiates a continuous-wave radio signal which upon reflection detonates the shell. The action is thus completely automatic.

Several types of proximity fuses actually were considered and worked upon. These were:

1. Photoelectric (actually put into limited production for rocket fuses, but subject to certain obvious disadvantages, such as variations in lighting conditions).
2. Infrared.
3. Acoustic.

4. Electrostatic (this was the most successful German approach, and some models actually were put into limited production).
5. Radio, depending upon discontinuities of conductivity, dielectric characteristics, and so forth.

The last of these is the one successfully developed and put into mass production in the United States for both British and American use.

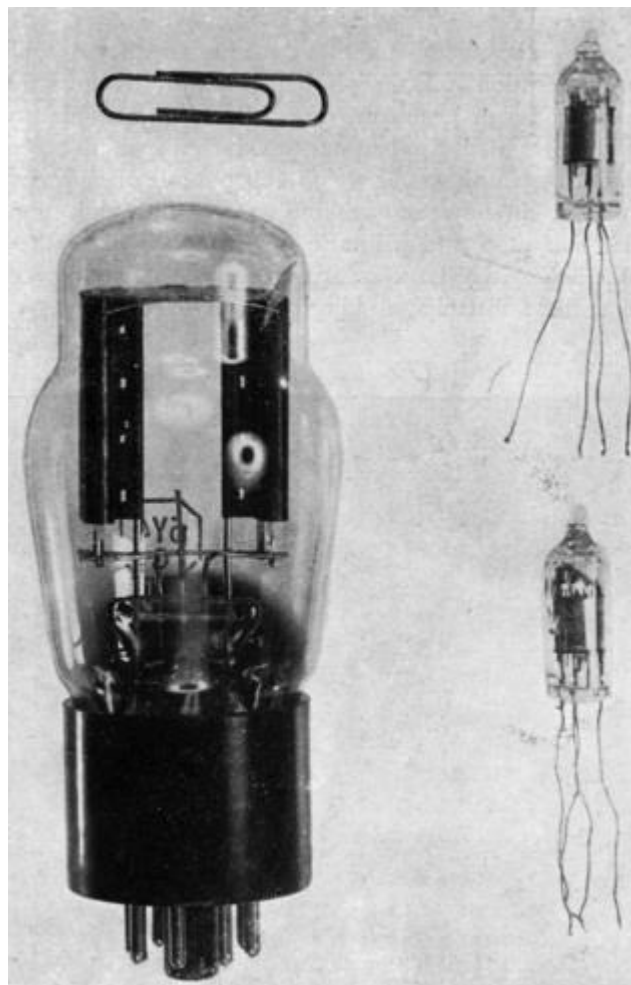


Fig. 2. Compactness of the tubes manufactured for the proximity fuse (right) as contrasted with the conventional radio tube (left) (National Bureau of Standards)

Design Problems

When it is remembered that these fuses must withstand an acceleration of 20,000g in being fired from a gun, the extreme design problems, especially for the miniature radio tubes used, can be understood. At such an acceleration a penny would weigh 130 pounds on a spring balance; an ounce of glass and wire would weigh more than half a ton, and ordinarily a radio tube will break at 10 to 50g. In order to construct a tube that would overcome these obstacles, a major redesign was required, for the weight of the tube elements could be reduced by a factor of only about ten. Under these conditions, the weight of a soldered joint becomes very important.

As has been explained, the Army undertook development of bomb and rocket type fuses, which in general contend with a different set of conditions. As the accelerations encountered are not nearly so great, different mechanical designs resulted; and, furthermore, the high altitudes and low temperatures encountered by highflying bombers and fighters led to the use of wind-driven generators rather than energizers or batteries of the type used for gun fuses.

All of these fuses, moreover, had to be mechanically interchangeable with the current types.

Production

Prime contractors for the manufacture of these fuses under Navy contract (for gun use) included, besides The Eastman Kodak Company, which is the only company still in this field, The Crosley Corporation, The Sylvania Electric Company, The Radio Corporation of America, and McQuay-Norris Manufacturing Company. The important energizer suppliers were the National Carbon Company, Eastman Kodak Company (working from National Carbon designs), and Hoover Company.

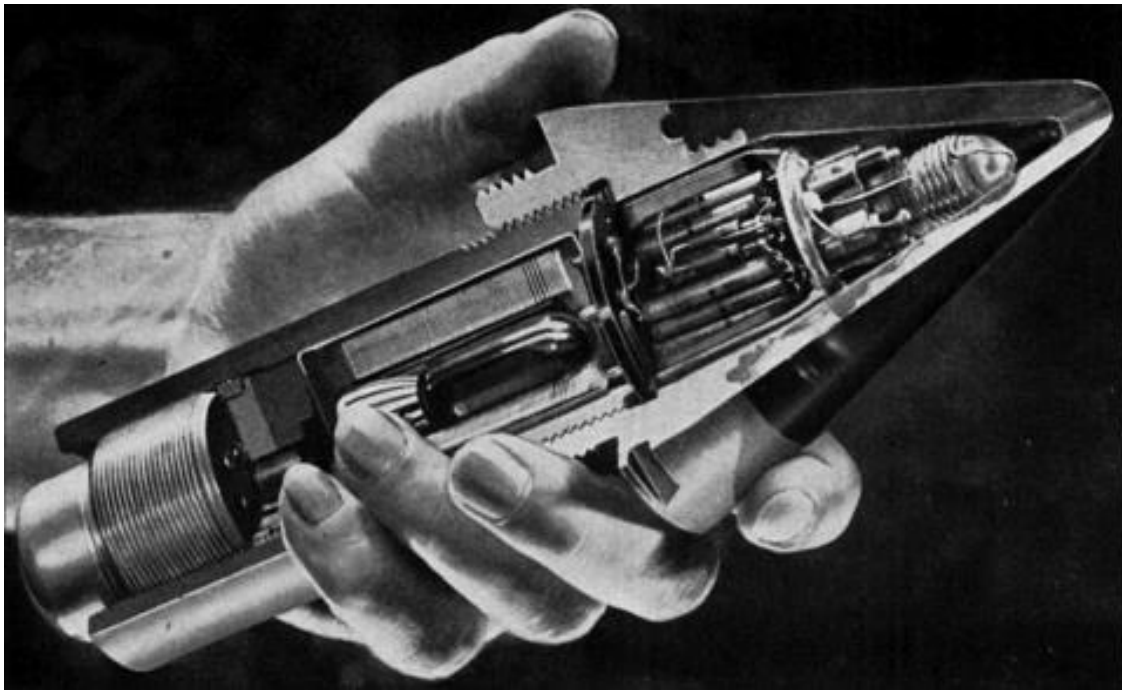


Fig. 3. Complete Mark 53 proximity fuse assembly. From the nose down are shown: the radio transmitter and receiver, the batteries, space for the safety switches, and the detonator

At the end of the war, The Sylvania Electric Company, which produced about 95 per cent of the tubes used at these accelerations, was producing about 500,000 per day. Before the war, only about 600,000 tubes per day of all kinds were made by all companies in the United States.

Prices also underwent a noteworthy revolution. The first pilot models of these fuses in 1942 and 1943 cost about \$40 a piece, exclusive of Government-furnished material, such as tubes and heavy steel parts. Mass production methods cut this cost to \$5 or \$6 a piece (about \$15—\$18 including Government-furnished material) and at peak production the various companies produced a total of more than 250,000 fuses per week. As this was a completely new manufacturing problem, contracts were let on a cost-plus basis.

Production was speeded greatly by being broken down into simple easily performed operations, and the complete unit thus was built up from a number of simpler subassemblies. All the resistors and capacitors in the amplifier circuit, for example, first were assembled in a flat form and then wrapped around the rubber sock which contained the tubes (this procedure was initiated at Eastman Kodak and later adopted by several other companies). Waste was reduced to a minimum by the careful screening of rejects, for in the bundle stage (before addition of the radio-frequency section) and in the prepot stage (before potting) the units could be repaired in many instances. After several rejections, however, wear and tear, plus the weakening and breakage of wires, especially the brittle capacitor leads, made salvage impractical, and the units were destroyed.

Security

Security was, and is, strict on this project. During the war, the very existence of such a device as the proximity fuse had to be kept secret. For this reason, all personnel were investigated carefully, and few people were allowed to know what really was being made, although some of the foremen and supervisors knew or guessed a great deal, as did a few of the workers. Code names were adopted in order to obscure the function of many classified parts. Tubes were called "glass"; capacitors, "tubulars"; and certain terms, such as "oscillation," were not used. Rumors occasionally leaked out, and at various times the project was thought to be making parts for B-29's, dental X-ray equipment, and the like, but secrecy was well kept.

As this was a secret weapon, a most important restriction on the use of VT or proximity fuses was the prohibition against using them when duds might be recoverable. This meant, until after the Normandy invasion, that they could be fired only on the high seas, and, as a further precaution, for some time mixtures of mechanical and proximity fuses were used in order to screen the improved performance of the latter and keep its very existence secret. Each and every fuse had to be accounted for under all circumstances, and this made handling difficult. According to one artillery officer, a group in the Battle of the Bulge spent two hours scuffling through the snow hunting for two fuses which finally were brought in by a French peasant woman who had been attracted by the peculiar conduct of the men.

The Radio Proximity Fuse in Action

Initial use of the radio proximity fuse in battle came January 5, 1943, when the cruiser *Helena* in the Pacific shot down an attacking airplane with two salvos from two twin-mount 5-inch guns. Wholesale use of the fuses was made by the destroyers *Hadley* and *Evans* in May 1945, off Okinawa. At 7 a. m. a wave of suicide airplanes was spotted; at 7: 03 a. m. the first airplane was shot down. Over 150 "kamikaze" airplanes attacked these two ships, and all the attackers were shot down. The *Evans* was struck four times by blazing airplanes or parts; and in one attack on the *Hadley* staged by ten airplanes simultaneously, parts of two hit the deck. Thus, this attack of 150 suicide airplanes resulted in the suicide of all 150 with only six blazing airplanes or parts of airplanes penetrating the screen of VT-iused fire. According to an official report, "... the horizon from the east to the northwest was full of burning planes. There were too many to count ..."

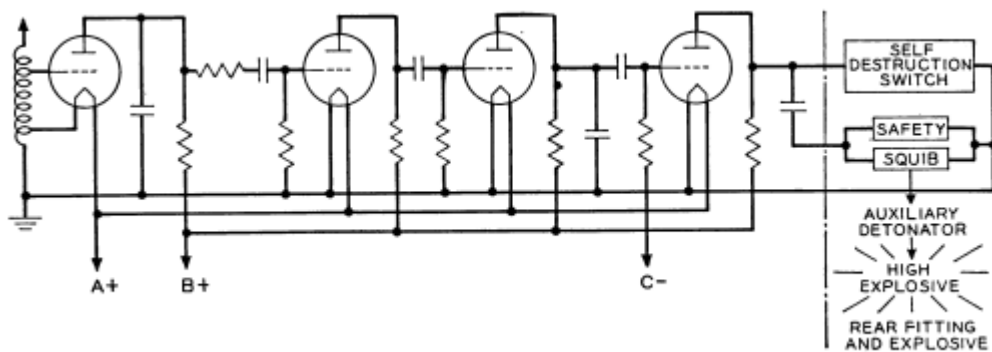


Fig. 4 Hartley type oscillator circuit as it might be used in a proximity fuse circuit

Christmas Day 1944 was set as the date of presentation of the VT fuse to the Germans, but this date was forced ahead one week by the German counterattack and advance through the Ardennes and by the resultant Battle of the Bulge. After a VT fuse barrage, according to an artillery officer who was in the Battle of the Bulge, the forest into which the Allied troops advanced looked as though it had been topped by the sweep of a giant scythe. Tree trunks were shattered and torn; almost every tree was severed about 40 feet from the ground.

Against the robot bombs also, the VT fuses proved of great worth. Of 104 V-1 robot bombs fired in one day, only 4 reached their target, London. Sixty-eight were shot down by 7T-fused antiaircraft fire; 14 were downed by the Royal Air Forces; 2 hit barrage balloons or their cables; and 16 suffered mechanical failure in flight.

During the later stages of the Pacific war, one third of all bombs dropped from carrier based airplanes were VT fused. Iwo Jima had the first pre-Z)-day bombardment with proximity-fused bombs in February 1945 from airplanes based upon Saipan. The antiaircraft fire after such a saturation bombing was unusually light. VTfused bombs were most effective against antiaircraft personnel and demoralized the gun crews. In April 1945, the 15th Air Force from B-24's at 25,000 feet dropped FT-fused bombs on flak positions in Northern Italy. All enemy batteries ceased firing, and the main body of the air group followed through the corridor unmolested. There was no antiaircraft fire for 21 1/2 hours. The 9th, 12th, and 15th Air Forces used VTfused incendiary bombs with devastating effect.

Official Testimonials

Secretary of the Navy James Forrestal stated that the proximity fuse protected our surface ships and greatly reduced the cost in both men and ships of the Pacific war. General George Patton said, "The new shell with the funny fuse is devastating. The other night we caught a German battalion which was trying to get across the Saar River with a battalion concentration and killed by actual count 702. I think when all Armies get this shell we shall have to devise some new method of warfare. I am glad that you all thought of it first ..."

VT Fuse Construction

The field of sensitivity of these VT or radio proximity fuses was designed to coincide as closely as possible with the burst pattern of the shell, in order that maximum effectiveness should be obtained. The amplifier is peaked at the Doppler frequency to reduce noise. Five safety devices are included for protection of our personnel.

In the proximity fuse a continuous-wave signal is transmitted and detection of the target is effected by the frequency shift of the reflected signal, a shift caused by the relative motion of the fuse and the object being detected.

As projectile and target are in relative motion, the proximity fuse can be considered as stationary, with the target approaching it at their relative

velocity, v . The target then will intercept v / λ extra waves each second and, therefore, will receive a signal of apparent frequency

$$f_a = f_o + v / \lambda$$

or since

$$\lambda = c / f$$

$$f_a = f_o (1 + v / c)$$

To find the apparent frequency of the reflected signal finally received at the fuse, consider the target as stationary and the fuse as in motion. The reflected signal finally received at the fuse, therefore, will have a frequency

$$f_r = f_a (1 + v / c)$$

or

$$f_r = f_o (1 + 2v / c)$$

The transmitting antenna is also the receiving antenna, and the transmitting oscillator doubles as an amplifier and autodyne detector. The beat note, or difference between the local oscillator frequency and the received frequency, will be $f = 2f_o(v/c)$. The radio-frequency components of the combined signals are by-passed to ground, and the Δf then is amplified. Selective filter and feed-

back circuits in the amplifier peak it at the Doppler frequency and adapt its sensitivity to its purpose.

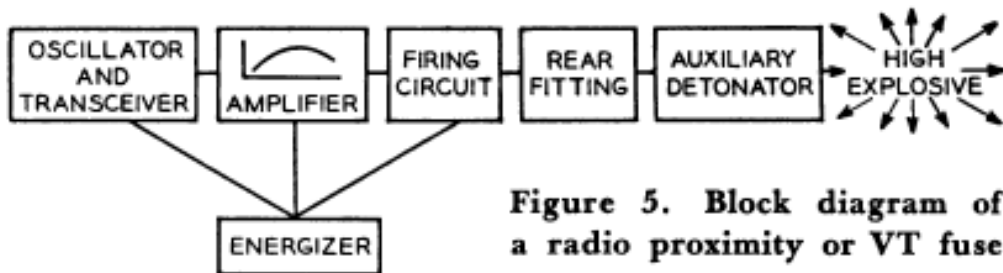


Figure 5. Block diagram of a radio proximity or VT fuse



Figure 6. Doppler effect for moving transmitter

$$f_a = f_0 + v/\lambda$$

f_0 = frequency at origin (fuse)

f_a = apparent frequency at target

V = relative velocity of target and fuse

λ = original wave length of signal

C = velocity of light

Essentially, therefore, the VT or radio proximity fuse consists of a very compact oscillator which radiates a continuous signal to the sides of the projectile in a pattern approximating that of the shell burst; and this signal is reflected from any body in its field. The target need not even be a good conductor, as the induced current responsible for reflection can be a displacement current. Any discontinuity of conductivity, dielectric constant, or permeability can cause reflection. The reflected signal is picked up by the

transmitting antenna, and interference between this reflected signal and the original signal gives a beat note. This signal, appearing across the load resistor in the plate circuit of the oscillator, which doubles as an autodyne detector, is filtered and amplified. The amplified signal then is applied to the grid of a miniature thyratron, which fires upon application of a strong enough signal, thus discharging a capacitor through the explosive squib. The squib sets off the auxiliary detonator, and that in turn sets off the high explosive charge. The whole fuse, consisting of antenna, oscillator, amplifier, thyratron, and firing capacitor is potted with a microcrystalline wax for moisture protection and for mechanical support.

The Energizer

The energizer, or battery, used in conjunction with the radio proximity fuse was originally a dry battery, and the voltages were applied to the fuse at setback or firing of the gun by inertia switches, which consisted of a tight coil of soft wire with a weighted end that sagged into permanent contact with a metal cup at setback. The shelflife of these dry cells was limited to about six months, and the present type of battery consequently was evolved with an acid-containing ampule which breaks at setback, thus activating the battery. One of the great problems in designing this energizer was the elimination of random potential fluctuations, otherwise known as noise, during the flight of the projectile.

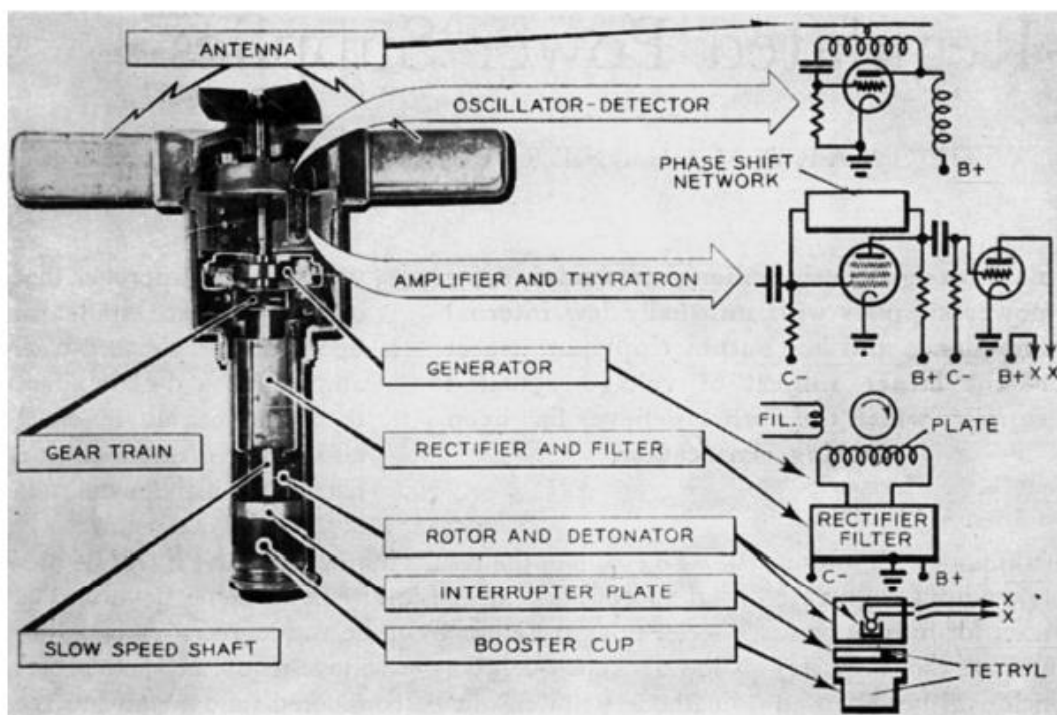
For bomb fuses a small wind-driven propeller was used to drive a generator which supplied the necessary electric power for the fuse. This finally was

made into a more compact and more vibration-free turbogenerator rotating at 50,000 rpm.

Safety Devices

Five precautions were built into the complete assembly of the proximity fuse in order to avoid danger to firing personnel and friendly troops. These were:

1. The energizer is not operative until setback breaks the acid containing ampule, and spin from the rifling in the gun barrel is required to distribute this electrolyte through the battery.
2. A mercury switch short-circuits the squib until the unit is spun at high rate. (In normal operation a charged capacitor is discharged through the squib to detonate the shell.)
3. A mechanical spin switch is incorporated to short-circuit this capacitor unless the unit is spinning. This gives protection until the unit is fired from the gun. When the rate of spin falls below a preset value after a charge has built up on the capacitor during flight, this switch discharges it through the squib, thus insuring self-destruction of the unit.
4. An out-of-line powder train is incorporated between the squib and the charge in the auxiliary detonator. This powder train is aligned by the spinning action.
5. A time delay is incorporated in the charging circuit of the capacitor which fires the squib to prevent the shell from detonating until it is well away from the gun and from firing personnel and friendly troops



National Bureau of Standards photo

Figure 7. A cutaway view of the generator-powered bomb use with a schematic circuit diagram of the primary subassemblies

The first four precautions, which function by preventing activation of the energizer, by short-circuiting the explosive squib, by not allowing the firing capacitor to build up its charge, and by preventing the squib from firing the auxiliary detonator, keep the projectiles high-explosive charge from going off until it actually is fired from a gun. Even dropping the projectile and releasing the electrolyte cannot actuate the fuse. The fifth precaution prevents muzzle bursts which could destroy gun and crew, or prematures which might scatter fragments among an army's own troops when the projectiles are fired over their heads at the enemy.

On the bomb fuses an auxiliary propeller and gear train could be clipped to the fuse which would release the fuse propeller after a predetermined amount of air travel. This allowed the fused bombs to be dropped safely through deep formations of bombers,

Generator-powered fuses fired from airplanes, thus equivalent of heavy caliber guns.

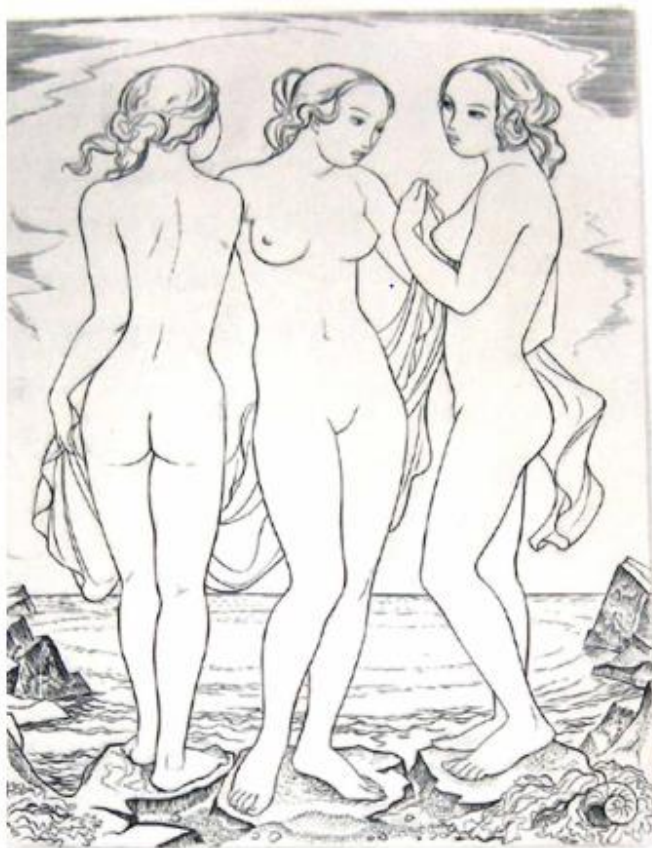
Importance of the Proximity Fuse in World War Two

Admittedly, the atomic bomb is the world's outstanding weapon, highlighting the need for the international rule of law and order; but radar and the proximity fuse had as important a role in World War II as any other single project. Although the Manhattan Project, the release of atomic energy, will have a much greater effect on the history of mankind and on the terms of peace, nevertheless, Project A, proximity field fuses for bombs and shells, affected more greatly the outcome of World War II.

These fuses in themselves have served to increase the effectiveness of antiaircraft fire about five times. Early in the war, it took about 1,000 shells to bring down an airplane; with mechanical time fuses and radar fire control about 500; with VT fuses about 85-100. Proximity fuses helped to save London from the buzz bomb, helped to turn the tide at the Battle of the Bulge, helped to oust the Japanese from his foxhole, helped to make the "kamikaze" impotent.

Howitzer bursts at tree-top height, or just above the ground, drove the stunned Germans from the forests of Bastogne. FT-fused antiaircraft fire, with the aid of automatic radar tracking, brought down more than 80 per cent of the robot bombs over England and most of the Japanese "kamikaze" airplanes over the Pacific. FT-fused rockets also were used effectively against aircraft and ground installations.

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Editor in Chief: Patrick Bruskiewich

I Led the Air Attack on Pearl Harbor by Mitsuo Fuchida,

Captain Mitsuo Fuchida

former Imperial Japanese Navy; Edited by Roger Pineau

From USNI Proceedings, September 1952, Vol. 78/9/595



In September, 1941, I was transferred from the staff of the Third Carrier Division to aircraft carrier Akagi, a position I had left just one year earlier. Shortly after joining my old comrades in Akagi, I was given additional duty as commander of all air groups of the First Air Fleet. This was an assignment beyond all my dreams. I felt that some thing big must be afoot.

It was at Kagoshima on the southern tip of Kyushu that I first learned the magnitude of events in store for me. My good friend Commander Genda, air operations officer on the staff of the First Air Fleet, came to see me at the air base and said, "Now don't be alarmed, Fuchida, but we want you to lead our air force in the event that we attack Pearl Harbor!"

Don't be alarmed? It was all I could do to catch my breath, and almost before I had done so we were on our way out to board Akagi, then anchored in Ariake Bay, for a conference with First Air Fleet commander, Vice Admiral Chuichi Nagumo, and his staff, including Chief of Staff, Rear Admiral Ryunosuke Kusaka.

The more I heard about the plan the more astonishing it seemed. Genda kept urging that torpedoes be used against ships in Pearl Harbor; a feat that seemed next to impossible in view of the water depth of only twelve meters, and the harbor being not more than five hundred meters in width. When I pointed this out, Genda merely grew more aggressive, insisting that if we could launch torpedoes, they would not be expected, it would add to the surprise of the attack and multiply their effectiveness. This line of argument won me over, and, despite the technical difficulties that would have to be overcome, I agreed to include torpedoes in our attack plans.

Shallow-water torpedo launching was not the only difficult problem I had to cope with. From ordinary fleet practice we had to shift our energies to specific training for this all-important mission calling for vast and intensive

preparations; and, what is more, everything had to be done in haste. It was already late September, and the attack plan called for execution in December!

There was no time to lose. Our fliers had to work at the hardest kind of training. An added handicap to our efforts lay in the fact that, for security reasons, the pilots could not be told about the plans. Our progress was slow, especially with the problem of launching torpedoes in shallow water. Against my will I had to demand more and more of every man, yet none complained. They seemed to sense the intensification of the international situation and gave of themselves unquestioningly.

It was not until early November that the torpedo problem was finally solved by fixing additional fins to the torpedoes, and then my greatest worry was over. I was indeed proud of my men and felt honored to be their commander and participate in this great attack.

In mid-November First Air Fleet planes were taken on board their respective carriers which then headed for the Kuriles, traveling singly and taking separate courses to avoid attention. By the 22nd the entire force had assembled in isolated Takan Bay on Etorofu second island from the southern end of the chain extending northeast from Hokkaido. This force consisted of carriers Akagi, Kaga, Soryu, Hiryu, Shokaku, Zuikaku, battleships Hiei, Kirishima; heavy cruisers Tone, Chikuma; light cruiser Abukuma; destroyers Urakaze, Isokaze, Tanikaze, Hamakaze. Kazumi, Arare, Kagero, Shiranuhi, Akigumo; submarines 1-19,1-21,1-23;

and tankers Kyokuto Maru, Kenyo Maru, Kokuyo Maru, Shinkoku Maru, Akebono Maru, Toho Maru, Toei Maru, and Nihon Maru.

The following order was issued from Tokyo on the day that Akagi sailed into Takan Bay:

Imperial General Headquarters

Navy Order No.5

21 November 1941

To: Commander in Chief Combined Fleet Isoroku Yamamoto

Via: Chief of Naval General Staff Osami Nagano By Imperial Order

1. Commander in Chief Combined Fleet will, at an appropriate time, dispatch to stand-by points necessary forces for execution of operations.
2. Commander in Chief Combined Fleet is empowered to use force in self defense in case his fleet is challenged by American, British or Dutch forces during the process of carrying out military preparations.
3. Detailed instructions will be given by the Chief of the Naval General Staff.

Four days later Admiral Yamamoto accordingly issued an operation order from his flagship *Nagato* at Hiroshima to Vice Admiral Nagumo, in command of the Pearl Harbor Attack Force:

The Task Force will leave Takan Bay on 26 November and, making every effort to conceal its movement, advance to the stand-by point, where fueling will be quickly completed.

The designated stand-by point was 42°N 170°W over a thousand miles to the north of the Hawaiian Island chain.

At 0600 on the dark and cloudy morning of 26 November our 28-ship task force weighed anchor and sailed out into the waters of the North Pacific Ocean. The sortie was cloaked in complete secrecy. A patrol boat guarding the bay entrance flashed a message, "Good luck on your mission." But even that boat was unaware of our assignment. Akagi signalled, "Thanks," and passed by, her ensign fluttering in the morning breeze. It would not be long before this ensign was replaced by a combat flag.

But this did not mean that the arrow had already gone from the bow. "In case negotiations with the U. S. reach a successful conclusion," Nagumo had been instructed, "the task force will put about immediately and return to the homeland." Unaware of this, however, the crews shouted "Banzai!" as they took what might be their last look at Japan.

On Akagi's bridge Commander Gishiro Miura, the navigation officer, was concentrating all his energies on control of the ship. Whether we reached the scheduled launching point successfully rested entirely upon his shoulders. So tense was his appearance that it made us feel he was a completely different man. His usual jovial attitude had disappeared. He now wore shoes instead of

his usual slippers, and he was neatly dressed, a decided change from his customary dirty, worn-out uniform. Captain Hasegawa, the skipper of the ship, stood beside him. Sitting at the flight desk control post under the bridge, I watched the gradually receding mountains of the Kuriles.

Young boys of the flying crews were boiling over with fighting spirit. Hard nights and days of training had been followed by hasty preparations, and now the sortie, which meant that they were going to war.

I felt their keen enthusiasm and was reassured. Still I could not help doubting whether Japan had the proper confidence for carrying out a war. At the same time, however, I fully realized my duty as a warrior to fight and win victory for my country.

Personally I was opposed to the operational policy. The idea of an attack on Pearl Harbor was a good one, but I thought the plan should have called for complete destruction of the United States Pacific Fleet at the outset, followed by an invasion of the Hawaiian Islands to push America entirely out of the Central Pacific. The plan covered expansion to the south—the Philippines, Malaya, Hongkong, Guam, and other such vulnerable positions. It was my opinion that if Pacific operations to the east proved successful, there would be no need for military operations in the south.

Since the United States was the main foe, I could not understand why operations were not aimed directly toward the east. Admiral Yamamoto was quoted as having said that he had no confidence in the outcome of war after

the first year. Why then, did he not press and press the enemy in the first year to force an early conclusion to the war? Anyway, the immediate mission was to strike a telling blow, and my assignment carried a grave responsibility. At the time I thought, "Who could be luckier than I?"

My thoughts continued: What if the Fleet is not in Pearl Harbor? In such a case we would seek out the enemy en route to the attack. If we should meet the enemy tomorrow would Nagumo withdraw? No, we should attack and destroy him, I thought, and if the Admiral showed any hesitation, I would volunteer my views on these matters.

Such thoughts came one after another, but one remained uppermost. I was determined to do my utmost for victory.

In the meantime, the fleet had assumed formation. The carriers sailed in parallel columns of three followed by the tankers. On the outside two battleships and two heavy cruisers took positions, the whole group encircled by a screen of the light cruiser and destroyers. The submarines patrolled about 200 miles ahead of our force. The course was direct to the stand-by point, speed was fourteen knots. The first fueling at sea was carried out five days after our sortie, on 30 November.

* * *

Since our departure from Takan Bay, a strict alert had been kept against U. S. submarines. Our course was chosen to pass between the Aleutians and

Midway Island so as to keep out of range of air patrols, some of which were supposed to extend 600 miles. Another concern during the cruise was how to avoid a chance meeting with foreign merchant ships. The three submarines sent ahead of the fleet were to report any ships sighted to the fleet, which would then alter course to avoid them.

If an enemy fleet was sighted before X-2 day, our force was to reverse course immediately and abandon the operation. On the other hand, if it was one day before X day, whether to reverse course or launch the attack was left to the discretion of the task force commander.

Meanwhile, deceptive measures were being taken elsewhere to cover up our movements. On 5, 6, and 7 December sailors of the Yokosuka Naval Barracks were sent to Tokyo on a sightseeing tour. In early December Tatsuta Maru of the N.Y.K. Line had even left Yokohama heading for Honolulu, and she reversed course only upon receipt of the news that hostilities had begun.

Since leaving Takan Bay we had maintained our eastward course in complete secrecy, thanks to thick, low-hanging clouds. Moreover, on 30 November, 6 and 7 December, the sea, which we feared might be rough, was calm enough for easy fueling. The not-too-rough sea also made it easy to maintain and prepare planes, and gave the men, especially the flying crews, a much needed chance to relax.

The fleet observed strict radio silence, but concentrated on listening for broadcasts from Tokyo or Honolulu. Our predominant concern was to catch any word about the outbreak of war.

In Tokyo a liaison conference between the Government and the High Command was held every day from 27 to 30 November to discuss the U. S. proposal of the 26th. It was concluded that the proposal was an ultimatum tending to subjugate Japan and making war inevitable. At the liaison conference of the 30th the decision was made to go, to war. This conference also concluded that a message declaring the end of negotiations be sent to the U. S., but that efforts be continued to the last moment. The final decision for war was made at an Imperial Conference on 1 December.

Next day the General Staff issued the long-awaited order and our task force received the Combined Fleet dispatch of 1730 which said, "X Day will be 8 December."

Now the die was cast and our duty was clear. The fleet drove headlong to the east.

Why was 8 December chosen as X day? That was 7 December and Sunday, a day of rest, in Hawaii. Was this merely a bright idea to hit the U. S. Fleet off duty? No, it was not so simple as that. This day for the opening of hostilities had been coordinated with the time of the Malayan operations, where air raids and landings were scheduled for dawn. Favorable moonlight was a major

consideration, three or four days after the full moon being the most desirable time, and on 8 December the moon was 19 days old.

There was another reason for choosing 8 December. Our information indicated that the fleet returned to harbor on weekends after training periods at sea, so there was great likelihood that it would be in Pearl Harbor on Sunday morning. All things considered, 8 December was the logical day for the attack.

Long before the planning of the Pearl Harbor attack we had been interested in fleet activities in the Hawaiian area. Our information showed:

1. The fleet either went out on Tuesday and returned on Friday, or went out on Friday and returned on Saturday of the next week. In either case, it stayed in harbor about a week. When it went out for two weeks, it would usually return by Sunday.
2. The fleet trained to the southeast of Pearl Harbor. Intercepted radio messages from planes flying between this training area and Pearl Harbor showed that these planes were in flight for forty to sixty minutes. Accordingly, the training area was estimated to be near Maui, and probably north of 19°N latitude.
3. It was hard to determine whether the fleet put in to any other port during training periods, and if so, where. There were some indications that it might go to Lahaina or Marlaea for a short while.

* * *

After Japan's decision to go to war had been sent to the Attack Force, intelligence reports on U. S. Fleet activities continued to be relayed to us from Tokyo. The information was thorough, but the news was often delayed two or three days in reaching Tokyo.

These reports from Imperial General Staff were generally as follows:

Issued 2200, 2 December; received 0017, 3 December

Activities in Pearl Harbor as of 0800/28 November:

Departed: 2 BB (*Oklahoma* and *Nevada*), 1 CV (*Enterprise*), 2 CA, 12 DD.

Arrived: 5 BB, 3 CA, 3 CL, 12 DD, 1 tanker.

Ships making port today are those which departed 22 November.

Ships in port on afternoon of 28 November estimated as follows:

6 BB (2 Maryland class, 2 California class, 2 Pennsylvania class)

1 CV (*Lexington*)

9 CA (5 San Francisco class, 3 Chicago class, and Salt Lake City)

5 CL (4 Honolulu class and Omaha)

Issued 2300, 3 December; received 0035, 4 December

Ships present Pearl Harbor on afternoon of 29 November:

District A (between Naval Yard and Ford Island)

KT (docks northwest of Naval Yard): *Pennsylvania* and *Arizona*

FV (mooring pillars): *California*, *Tennessee*, *Maryland*, and *West Virginia*

KS (naval yard repair dock): *Portland*

In docks: 2 CA, 1 DD

Elsewhere: 4 SS, 1 DD tender, 2 patrol ships, 2 tankers, 2 repair ships, 1 minesweeper

District B (sea area northwest of Ford Island)

FV (mooring pillars): *Lexington*

Elsewhere: *Utah*, 1 CA (*San Francisco* class), 2 CL (*Omaha* class), 3 gunboats

District C (East Loch)

3 CA, 2 CL (*Honolulu* class), 17 DD, 2 DD tenders

District D (Middle Loch)

12 minesweepers

District E (West Loch)

No ships

No changes observed by afternoon of 2 December. So far they do not seem to have been alerted. Shore leaves as usual.

Issued 2030, 4 December; received 0420, 5 December

So far no indications of sea patrol flights being conducted. It seems that occasional patrols are being made to Palmyra, Johnston and Midway Islands. Pearl Harbor patrols unknown.

Issued 2200, 6 December; received 1036, 7 December

Activities in Pearl Harbor on the morning of 5 December:

Arrived: *Oklahoma* and *Nevada* (having been out for eight days)

Departed: *Lexington* and five heavy cruisers

Ships in harbor as of 1800, 5 December:

8 BB, 3 CL, 16 DD

In docks: 4 CL (*Honolulu* class), 5 DD

Issued 1700, 7 December; received 1900, 7 December

No balloons, no torpedo-defense nets deployed around battleships. No indications observed from enemy radio activity that ocean patrol flights are being made in Hawaiian area. *Lexington* left harbor yesterday (5 December, local time) and recovered planes. *Enterprise* is also thought to be operating at sea with her planes on board.

Issued 1800, 7 December; received 2050, 7 December

Utah and a seaplane tender entered harbor in the evening of 5 December.
(They had left harbor on 4 December.)

Ships in harbor as of 6 December:

9 BB, 3 CL, 3 seaplane tenders, 17 DD

In docks: 4 CL, 3 DD

All carriers and heavy cruisers are at sea. No special reports on the fleet. Oahu is quiet and Imperial General Staff is fully convinced of success.

These reports presumably had been sent from Honolulu, but I do not know the details.

On 6 December after fueling *Cardiv 2* and the Screening Force, the 2nd Tanker Train broke off from the task force. On the next day the 1st Tanker Train fueled the Screen again and departed. Our force then increased speed to 24 knots and raced toward Pearl Harbor. On the carrier decks planes were lined up wing to wing for their final check. Maintenance crews and flying crews worked assiduously to complete final preparation of their planes.

About this time we received Admiral Yamamoto's message for going to war: "The rise or fall of the Empire depends upon this battle; everyone will do his duty with utmost efforts." The message was immediately relayed to all hands, and the "Z" flag was hoisted on *Akagi's* mast. This was the same signal flag that was run up in *Mikasa* almost thirty years before in the Straits of Tsushima.

At 1225 on the 7th (1725, 6 December in Honolulu) a message came in from submarine 1-72: "American Fleet is not in Lahaina Anchorage."

This anchorage was used for training because it was open and deep. If the Pacific Fleet was there, it would have offered our best chance for success, and we had hoped accordingly. Receipt of the negative information, however, blasted our hopes for such an opportunity.

It was now obvious that the warships were either in Pearl Harbor or at sea. Admiral Nagumo was thumbing through the message log to check on battleships reported to be in Pearl Harbor. Completing the count, he looked up and said to the staff members, "All of their battleships are now in. Will any of them leave today?"

The Intelligence Officer, Lieutenant Commander Ono, was first to reply: "Since five of their eight battleships reached port on the 29th, and two others left that day returning on the 6th, there is one more which has remained in harbor all this time, supposedly under repair, or perhaps in dry dock. The five ships which arrived on the 29th have been there eight days, and it is time for them to leave. I suspect they may go out today."

"Today is Saturday, 6 December," said Chief of Staff Kusaka. "Their general practice is to leave on Tuesday, which would be the 9th."

"It is most regrettable," said Genda, the Operations Officer, "that no carriers are in."

"On 29 November," Ono explained, "*Enterprise* left harbor accompanied by two battleships, two heavy cruisers and twelve destroyers. The two battleships returned on the 6th, but the rest have not yet come back. *Lexington* came in on the 29th and left with five heavy cruisers on the 6th. Thus, *Enterprise* ought to return today. *Saratoga* is under repair at San Diego, and *Wasp* is in the Atlantic. But *Yorktown* and *Hornet* belonging to the Pacific Fleet must be out here. They may have arrived with *Enterprise* today."

"If that happens," said Genda, "I don't care if all eight of the battleships are away."

"As an air man," remarked Oishi, "you naturally place much importance on carriers. Of course it would be good if we could get three of them, but I think it would be better if we get all eight of the battleships."

Chief of Staff Kusaka, who had always been strong for statistical studies of the U. S. Pacific Fleet, now spoke, "There is only a slight chance that carriers may enter the harbor on Saturday, and it seems unlikely that the battleships would leave on Saturday or Sunday. We may take it for granted that all eight battleships will be in the harbor tomorrow. We can't do anything about carriers that are not there. I think we should attack Pearl Harbor tomorrow."

Thus he set the stage for the decision of the task force commander, which was made known in the evening of the 7th when Admiral Nagumo gave his appraisal of the enemy situation:

1. Enemy strength in the Hawaiian area consists of eight battleships, two carriers, about ten heavy and six light cruisers. The carriers and heavy cruisers seem to be at sea, but the others are in the harbor. Those operating at sea are most likely in the training area south of Maui; they are not in Lahaina.
2. Unless an unforeseen situation develops tonight, our attack will be launched upon Pearl Harbor.
3. So far there is no indication that the enemy has been alerted, but that is no reason to relax our security.

* * *

At 0530, 7 December, Chikuma and Tone each catapulted a "Zero" float plane for a pre-attack reconnaissance of Pearl Harbor. On carrier flight decks readied fighter and attack planes were lined up. The flying crews, also primed for the operation, were gathered in the briefing room. The ships pitched and rolled in the rough sea, kicking up white surf from the pre-dawn blackness of the water. At times wave spray came over the flight deck, and crews clung desperately to their planes to keep them from going into the sea.

In my flying togs I entered the operation room and reported to the Commander in Chief, "I am ready for the mission." Nagumo stood up, grasped my hand firmly and said, "I have confidence in you." He followed me to the dimly lit briefing room where Akagi's Captain was waiting with the pilots. The room was not large enough for all of the men, some of whom had to stand out in the passageway. On a blackboard were written the positions of ships in Pearl Harbor as of 0600, 7 December. We were 230 miles due north of Oahu.

Calling the men to attention, I saluted Captain Hasegawa, who spoke a brief final order, "Take off according to plan."

The crews went out hurriedly to their waiting planes. Last to leave, I climbed to the flight deck command post where Genda put his hand on my shoulder. We smiled without speaking, knowing well each other's thoughts.

Turning to me, Air Officer Masuda said, "There is a heavy pitch and roll. What do you think about taking off in the dark?" The sea was rough, and there was a strong wind blowing. The sky was completely dark, and as yet the horizon was not visible.

"The pitch is greater than the roll," I replied. "Were this a training flight, the take-off would be delayed until dawn. But if we coordinate the take-offs with the pitching we can launch successfully." I saluted the officers and went to my plane, the tail of which was striped with red and yellow to distinguish it as the commander's.

The senior petty officer of the maintenance gang handed me a white hachimaki (cloth headband) saying, "This is a present from the maintenance crews. May I ask that you take it along to Pearl Harbor?" I nodded and fastened the gift to my flying cap.

The carrier turned to port and headed into the northerly wind. The battle flag was now added to the "z" flag flying at the masthead. Lighted flying lamps shivered with the vibration of engines as planes completed their warm-up.

* * *

On the flight deck a green lamp was waved in a circle to signal "Take off!" The engine of the foremost fighter plane began to roar. With the ship still pitching and rolling, the plane started its run, slowly at first but with steadily increasing speed. Men lining the flight deck held their breath as the first plane took off successfully just before the ship took a downward pitch. The next plane was already moving forward. There were loud cheers as each plane rose into the air.

Thus did the first wave of 183 fighters, bombers, and torpedo planes take off from the six carriers. Within fifteen minutes they had all been launched and were forming up in the still-dark sky, guided only by signal lights of the lead planes. After one great circling over the fleet formation, the planes set course due south for Oahu Island and Pearl Harbor. It was 0615.

* * *

Under my direct command were 49 level bombers. About 500 meters to my right and slightly below me were 40 torpedo planes. The same distance to my left, but about 200 meters above me, were 51 dive bombers, and flying cover

for the formation there were 43 fighters. These other three groups were led by Lieutenant Commanders Murata, Takahashi, and Itaya, respectively.

We flew through and over the thick clouds which were at 2000 meters, up to where day was ready to dawn. And the clouds began gradually to brighten below us after the brilliant sun burst into the eastern sky. I opened the cockpit canopy and looked back at the large formation of planes. The wings glittered in the bright morning sunlight.

The speedometer indicated 125 knots and we were favored by a tail wind. At 0700 I figured that we should reach Oahu in less than an hour. But flying over the clouds we could not see the surface of the water, and, consequently, had no check on our drift. I switched on the radio-direction finder to tune in the Honolulu radio station and soon picked up some light music. By turning the antenna I found the exact direction from which the broadcast was coming and corrected our course, which had been five degrees off.

Continuing to listen to the program, I was wondering how to get below the clouds after reaching Oahu. If the island was covered by thick clouds like those below us, the level bombing would be difficult; and we had not yet had reports from the reconnaissance planes.

In tuning the radio a little finer I heard, along with the music, what seemed to be a weather report. Holding my breath, I adjusted the dial and listened intently. Then I heard it come through a second time, slowly and distinctly:

"Averaging partly cloudy, with clouds mostly over the mountains. Cloud base at 3500 feet. Visibility good. Wind north, 10 knots."

What a windfall for us! No matter how careful the planning, a more favorable situation could not have been imagined. Weather conditions over Pearl Harbor had been worrying me greatly, but now with this information I could turn my attention to other problems. Since Honolulu was only partly cloudy, there must be breaks in the clouds over the island. But since the clouds over the mountains were at 1000 meters altitude, it would not be wise to attack from the northeast, flying over the eastern mountains, as previously planned. The wind was north and visibility good. It would be better to pass to the west of the island and make our approach from the south.

At 1030 we had been in the air for about an hour and a half. It was time that we were seeing land, but there was only a solid layer of clouds below. All of a sudden the clouds broke, and a long white line of coast appeared. We were over Kahuku Point, the northern tip of the island, and now it was time for our deployment.

There were alternate plans for the attack: If we had surprise, the torpedo planes were to strike first, followed by the level bombers and then the dive bombers, which were to attack the air bases including Hickam and Ford Island near the anchorage. If these bases were first hit by the dive bombers, it was feared that the resultant smoke might hinder torpedo and level-bombing attacks on the ships.

On the other hand, if enemy resistance was expected, the dive bombers would attack first to cause confusion and attract enemy fire. Level bombers, coming next, were to bomb and destroy enemy antiaircraft guns, followed by the torpedo planes which would attack the ships.

The selection of attack method was for my decision, to be indicated by signal pistol: one "black dragon" for a surprise attack, two "black dragons" if it appeared that surprise was lost. Upon either order the fighters were immediately to dash in as cover.

There was still no news from the reconnaissance planes, but I had made up my mind that we could make a surprise attack, and thereupon ordered the deployment by raising my signal pistol outside the canopy and firing one "black dragon." The time was 0740.

With this order dive bombers rose to 4000 meters, torpedo bombers went down almost to sea level, and level bombers came down just under the clouds. The only group that failed to deploy was the fighters. Flying above the rest of the formation, they seemed to have missed the signal because of the clouds. Realizing this I fired another shot toward the fighter group. This time they noticed the signal immediately and sped toward Oahu.

This second shot, however, was taken by the commander of the dive bomber group as the second of two "black dragons," signifying a non-surprise attack which would mean that his group should attack first, and this error served to confuse some of the pilots who had understood the original signal.

Meanwhile a reconnaissance report came in from Chikuma's plane giving the locations of ten battleships, one heavy cruiser, and ten light cruisers in the harbor. It also reported a 14-meter wind from bearing 080, and clouds over the U. S. Fleet at 1700 meters with a scale 7 density. The Tone plane also reported that "the enemy fleet is not in Lahaina Anchorage." Now I knew for sure that there were no carriers in the harbor. The sky cleared as we moved in on the target and Pearl Harbor was plainly visible from the northwest valley of the island. I studied our objective through binoculars. They were there all right, all eight of them. "Notify all planes to launch attacks," I ordered my radio man who immediately began tapping the key. The order went in plain code; "To, to, to, to..." The time was 0749.

* * *

When Lieutenant Commander Takahashi and his dive-bombing group mistook my signal, and thought we were making a non-surprise attack, his 53 planes lost no time in dashing forward. His command was divided into two groups: one led by himself which headed for Ford Island and Hickam Field, the other, led by Lieutenant Sakamoto, headed for Wheeler Field.

The dive bombers over Hickam Field saw heavy bombers lined up on the apron. Takahashi rolled his plane sharply and went into a dive, followed immediately by the rest of his planes, and the first bombs fell at Hickam. The next places hit were Ford Island and Wheeler Field. In a very short time huge billows of black smoke were rising from these bases. The lead torpedo planes

were to have started their run to the Navy Yard from over Hickam, coming from south of the bay entrance. But the sudden burst of bombs at Hickam surprised Lieutenant Commander Murata who had understood that his torpedo planes were to have attacked first. Hence he took a short cut lest the smoke from those bases cover up his targets. Thus the first torpedo was actually launched some five minutes ahead of the scheduled 0800. The time of each attack was as follows:

0755 Dive bombers at Hickam and Wheeler

0757 Torpedo planes at battleships

0800 Fighters strafing air bases

0805 Level bombers at battleships

* * *

After issuance of the attack order, my level bomber group kept east of Oahu going past the southern tip of the island. On our left was the Barbers Point airfield, but, as we had been informed, there were no planes. Our information indicated that a powerful anti-aircraft battery was stationed there, but we saw no evidence of it.

I continued to watch the sky over the harbor and activities on the ground. None but Japanese planes were in the air, and there were no indications of air combat. Ships in the harbor still appeared to be asleep, and the Honolulu radio broadcast continued normally. I felt that surprise was now assured, and that my men would succeed in their missions.

Knowing that Admirals Nagumo, Yamamoto, and the General Staff were anxious about the attack, I decided that they should be informed. I ordered the following message sent to the fleet: "We have succeeded in making a surprise attack. Request you relay this report to Tokyo." The radio man reported shortly that the message had been received by Akagi.

The code for a successful surprise attack was "Tara, tara, tara..." Before Akagi's relay of this message reached Japan, it was received by Nagata in Hiroshima Bay and the General Staff in Tokyo, directly from my plane! This was surely a long-distance record for such a low-powered transmission from an airplane, and might be attributed to the use of the word "Tara" as our code. There is a Japanese saying, "A tiger (tora) goes out 1000 ri (2000 miles) and returns without fail."

I saw clouds of black smoke rising from Hickam and soon thereafter from Ford Island. This bothered me and I wondered what had happened. It was not long before I saw waterspouts rising alongside the battleships, followed by more and more waterspouts. It was time to launch our level bombing attacks so I ordered my pilot to bank sharply, which was the attack signal for the planes following us. All ten of my squadrons then formed into a single column with intervals of 200 meters. It was indeed a gorgeous formation.

The lead plane in each squadron was manned by a specially trained pilot and bombardier. The pilot and bombardier of my squadron had won numerous fleet contests and were considered the best in the Japanese Navy. I approved when Lieutenant Matsuzaki asked if the lead plane should trade positions with

us, and he lifted our plane a little as a signal. The new leader came forward quickly, and I could see the smiling round face of the bombardier when he saluted. In returning the salute I entrusted the command to them for the bombing mission.

As my group made its bomb run, enemy anti-aircraft suddenly came to life. Dark gray bursts blossomed here and there until the sky was clouded with shattering near misses which made our plane tremble. Shipboard guns seemed to open fire before the shore batteries. I was startled by the rapidity of the counterattack which came less than five minutes after the first bomb had fallen. Were it the Japanese Fleet, the reaction would not have been so quick, because although the Japanese character is suitable for offensives, it does not readily adjust to the defensive.

Suddenly the plane bounced as if struck by a huge club. "The fuselage is holed to port," reported the radio man behind me, "and a steering-control wire is damaged." I asked hurriedly if the plane was under control, and the pilot assured me that it was.

No sooner were we feeling relieved than another burst shook the plane. My squadron was headed for Nevada's mooring at the northern end of battleship row on the east side of Ford Island. We were just passing over the bay entrance and it was almost time to release our bombs. It was not easy to pass through the concentrated anti-aircraft fire. Flying at only 3000 meters, it seemed that this might well be a date with eternity.

I further saw that it was not wise to have deployed in this long single-column formation. The whole level bomber group could be destroyed like ducks in a shooting gallery. It would also have been better if we had approached the targets from the direction of Diamond Head. But here we were at our targets and there was a job to be done.

It was not a matter of utmost importance to stay on course, and the lead plane kept to its line of flight like a homing pigeon. Ignoring the barrage of shells bursting around us, I concentrated on the bomb loaded under the lead plane, pulled the safety bolt from the bomb release lever and grasped the handle. It seemed as if time was standing still.

Again we were shaken terrifically and our planes were buffeted about. When I looked out the third plane of my group was abeam of us and I saw its bomb fall! That pilot had a reputation for being careless. In training his bomb releases were poorly timed, and he had often been cautioned.

I thought, "That damn fellow has done it again!" and shook my fist in his direction. But I soon realized that there was something wrong with his plane and he was losing gasoline. I wrote on a small blackboard, "What happened?" and held it toward his plane. He explained, "Underside of fuselage hit."

Now I saw his bomb cinch lines fluttering wildly, and sorry for having scolded him, I ordered that he return to the carrier. He answered, "Fuel tank destroyed, will follow you," asking permission to stay with the group. Knowing the feelings of the pilot and crew, I gave permission, although I knew it was

useless to try taking that crippled and bombless plane through the enemy fire. It was nearly time for bomb release when we ran into clouds which obscured the target, and I made out the round face of the lead bombardier who was waving his hands back and forth to indicate that we had passed the release point. Banking slightly we turned right toward Honolulu, and I studied the anti-aircraft fire, knowing that we would have to run through it again. It was now concentrated on the second squadron.

While circling for another try, I looked toward the area in which the bomb from the third plane had fallen. Just outside the bay entrance I saw a large water ring close by what looked like a destroyer. The ship seemed to be standing in a floating dock, attached to both sides of the entrance like a gate boat. I was suddenly reminded of the midget submarines which were to have entered the bay for a special attack.

At the time of our sortie I was aware of these midget submarines, but knew nothing of their characteristics, operational objectives, force organization, or the reason for their participation in the attack. In Akagi, Commander Shibuya, a staff officer in charge of submarine operations, had explained that they were to penetrate the harbor the night before our attack; but, no matter how good an opportunity might arise, they were not to strike until after the planes had done so.

Even now the submarines were probably concealed in the bay, awaiting the air attack. Had the entrance been left open, there would have been some opportunity for them to get out of the harbor. But in light of what I had just

seen there seemed little chance of that, and, feeling now the bitterness of war, I vowed to do my best in the assigned mission.

While my group was circling over Honolulu for another bombing attempt, other groups made their runs, some making three tries before succeeding. Suddenly a colossal explosion occurred in battleship row. A huge column of dark red smoke rose to 1000 feet and a stiff shock wave reached our plane. I called the pilot's attention to the spectacle, and he observed, "Yes, Commander, the powder magazine must have exploded. Terrible indeed!" The attack was in full swing, and smoke from fires and explosions filled most of the sky over Pearl Harbor.

My group now entered on a bombing course again. Studying battleship row through binoculars, I saw that the big explosion had been on Arizona. She was still flaming fiercely and her smoke was covering Nevada, the target of my group. Since the heavy smoke would hinder our bomber accuracy, I looked for some other ship to attack. Tennessee, third in the left row, was already on fire; but next in row was Maryland, which had not yet been attacked. I gave an order changing our target to this ship, and once again we headed into the anti-aircraft fire. Then came the "ready" signal and I took a firm grip on the bomb release handle, holding my breath and staring at the bomb of the lead plane.

Pilots, observers, and radio men all shouted, "Release!" on seeing the bomb drop from the lead plane, and all the others let go their bombs. I immediately lay flat on the floor to watch the fall of bombs through a peephole. Four bombs

in perfect pattern plummeted like devils of doom. The target was so far away that I wondered for a moment if they would reach it. The bombs grew smaller and smaller until I was holding my breath for fear of losing them. I forgot everything in the thrill of watching the fall toward the target. They became small as poppy seeds and finally disappeared just as tiny white flashes of smoke appeared on and near the ship.

From a great altitude near misses are much more obvious than direct hits because they create wave rings in the water which are plain to see. Observing only two such rings plus two tiny flashes I shouted, "Two hits!" and rose from the floor of the plane. These minute flashes were the only evidence we had of hits at that time, but I felt sure that they had done considerable damage. I ordered the bombers which had completed their runs to return to the carriers, but my own plane remained over Pearl Harbor to observe our successes and conduct operations still in progress

* * *

After our bomb run I ordered my pilot to fly over each of the air bases, where our fighters were strafing, before returning over Pearl Harbor to observe the result of our attacks on the warships. Pearl Harbor and vicinity had been turned into complete chaos in a very short time.

Target ship Utah, on the western side of Ford Island, had already capsized. On the other side of the island West Virginia and Oklahoma had received concentrated torpedo attacks as a result of their exposed positions in the outer

row. Their sides were almost blasted off and they listed steeply in a flood of heavy oil. Arizona was in miserable shape, her magazine apparently having blown up, she was listing badly and burning furiously.

Two other battleships, Maryland and Tennessee, were on fire; especially the latter whose smoke emerged in a heavy black column which towered into the sky. Pennsylvania, unscathed in the dry-dock, seemed to be the only battleship that had not been attacked.

Most of our torpedo planes, under Lieutenant Commander Murata, flew around the Navy Yard area and concentrated their attacks on the ships moored east of Ford Island. A summary of their reports, made upon return to our carriers, indicated the following hits: one on Nevada, nine on West Virginia, twelve on Oklahoma, and three on California.

Elements of the torpedo bombers attacked ships west of the island, but they found only Utah and attacked her claiming six hits. Other torpedo planes headed for Pennsylvania, but seeing that she was in dry-dock they shifted their attack to a cruiser and destroyer tied up at Pier 1010. Five torpedo hits were claimed on these targets, which were Helena and Oglala.

As I observed the damage done by the first attack wave, the effectiveness of the torpedoes seemed remarkable, and I was struck with the shortsightedness of the United States in being so generally unprepared and in not using torpedo nets. I also thought of our long hard training in Kagoshima Bay and the efforts of those who had labored to accomplish a seemingly impossible task. A warm

feeling came with the realization that the reward of those efforts was unfolded here before my eyes.

During the attack many of our pilots noted the brave efforts of the American flyers able to take off who, though greatly outnumbered, flew straight in to engage our planes. Their effect was negligible, but their courage commanded the admiration and respect of our pilots.

It took the planes of the first attack wave about one hour to complete their mission. By the time they were headed back to our carriers, having lost three fighters, one dive bomber, and five torpedo planes, the second wave of 171 planes commanded by Lieutenant Commander Shimazaki was over the target area. Arriving off Kahuku Point at 0840, the attack run was ordered 14 minutes later and they swept in, making every effort to avoid the billowing clouds of smoke as well as the now-intensified anti-aircraft fire.

In this second wave there were 36 fighters to control the air over Pearl Harbor, 54 high-level bombers led by Shimazaki to attack Hickam Field and the Naval Air Stations at Kaneohe, while 81 dive bombers led by Lieutenant Commander Egusa flew over the mountains to the east and dashed in to hit the warships.

By the time these last arrived, the sky was so covered with clouds and smoke that planes had difficulty in locating their targets. To further complicate the problems of this attack, the ship and ground anti-aircraft fire was now very heavy. But Egusa was undaunted in leading his dive bombers through the

fierce barrage. The planes chose as their targets the ships which were putting up the stiffest repelling fire. This choice proved effective since these ships had suffered least from the first attack. Thus the second attack achieved a nice spread, hitting the least damaged battleships as well as previously undamaged cruisers and destroyers. This attack also lasted about one hour, but due to the increased return fire, it suffered higher casualties: six fighters and fourteen dive bombers being lost.

After the second wave was headed back to the carriers, I circled Pearl Harbor once more to observe and photograph the results. I counted four battleships definitely sunk and three severely damaged. Still another battleship appeared to be slightly damaged and extensive damage had also been inflicted upon other type of ships. The seaplane base at Ford Island was all in flames, as were the airfields, especially Wheeler Field.

A detailed survey of damage was impossible because of the dense pall of black smoke. Damage to the airfields was not determinable, but it was readily apparent that no planes on the fields were operational. In the three hours that my plane was in the area we did not encounter a single enemy plane. It seemed that at least half the island's air strength must have been destroyed. Several hangars remained untouched, however, and it was possible that some of them held planes which were still operational.

Such were my conclusions as I prepared to return to our carrier. I was startled from these thoughts by the sudden approach of a fighter plane banking from side to side. We were greatly relieved to see the Rising Sun on its wings. As

it came closer we saw that it was a Zuikaku fighter which must have been here since the first attack wave. I wondered if any other fighters had been left behind, and ordered my pilot to go to the rendezvous point for a final check. Sure enough, there we found a second fighter plane who also followed joyfully after us.

It was extremely difficult for fighter planes to fly long distances at sea. They were not equipped with homing devices and radar as were the larger planes. It was therefore planned to have the bombers, upon completion of their missions, rendezvous with the fighters at a designated point and lead them back to the carriers. Some of the fighters, however, such as these two, must have missed the time of rendezvous, and they were indeed fortunate to find our plane which could lead them safely back to the task force and their carriers.

* * *

My plane was just about the last one to get back to Akagi where refueled and rearmed planes were being lined up on the busy flight deck in preparation for yet another attack. I was called to the bridge as soon as the plane stopped, and could tell on arriving there that Admiral Nagumo's staff had been engaged in heated discussions about the advisability of launching the next attack. They were waiting for my account of the battle.

"Four battleships definitely sunk," I reported. "One sank instantly, another capsized, the other two settled to the bottom of the bay and may have

capsized." This seemed to please Admiral Nagumo who observed, "We may then conclude that anticipated results have been achieved."

Discussion next centered upon the extent of damage inflicted at airfields and air bases, and I expressed my views saying, "All things considered we have achieved a great amount of destruction, but it would be unwise to assume that we have destroyed everything. There are still many targets remaining which should be hit. Therefore I recommend that another attack be launched."

The factors which influenced Admiral Nagumo's decision—the target of much criticism by naval experts, and an interesting subject for naval historians—have long been unknown, since the man who made it died in the summer of 1944 when United States forces invaded the Marianas. I know of only one document in which Admiral Nagumo's reasons are set forth, and there they are given as follows:

1. The first attack had inflicted all the damage we had hoped for, and another attack could not be expected to greatly increase the extent of that damage.
2. Enemy return fire had been surprisingly prompt even though we took them by surprise; another attack would meet stronger opposition and our losses would certainly be disproportionate to the additional destruction which might be inflicted.
3. Intercepted enemy messages indicated at least 50 large planes still operational; and we did not know the whereabouts of the enemy's carriers, cruisers, and submarines.

4. To remain within range of enemy land-based planes was distinctly to our disadvantage, especially since the effectiveness of our air reconnaissance was extremely limited.

I had done all I could to urge another attack, but the decision rested entirely with Admiral Nagumo, and he chose to retire without launching the next attack. Immediately flag signals were hoisted ordering the course change, and our ships headed northward at high speed.

Mitsuo Fuchida served 25 years in the Imperial Japanese Navy and was a captain at the end of World War II. An aviator with 3000 hours of flight time, he served as commander of the air groups of Cardiv 1 from August, 1941, to July, 1942, in Akagi. Wounded during the Battle of Midway, he was hospitalized for about one year. In June, 1943, he was made senior staff officer of the 1st Air Fleet at Kanoya, and later at Tinian when the 1st Air Fleet was moved to the Marianas. In April, 1944, he was transferred to Oyodo as Air Operations Officer of the Combined Fleet. When Fleet Headquarters moved ashore to Hiyoshi in September, 1944, he continued in this same position until the end of the war.

Roger Pineau, a lieutenant, U. S. Naval Reserve (inactive), graduated from the University of Michigan in 1942 and from the Naval Japanese Language School in 1943. He served in naval communications during the war, after which he was with the U. S. Strategic Bombing Survey in Japan. His next duty was as an assistant to Rear Admiral Samuel Eliot Morison, U. S. Naval Reserve (Retired), in the preparation of the History of U. S. Naval Operations

in World War II, and he has continued in that capacity as a civilian since his release to inactive duty in 1950.



IJN Aircraft Carrier Akagi, Dec 1941

History

President Dwight D. Eisenhower – Farewell Address



17 January, 1961

Good evening, my fellow Americans.

First, I should like to express my gratitude to the radio and television networks for the opportunities they have given me over the years to bring reports and messages to our nation. My special thanks go to them for the opportunity of addressing you this evening.

Three days from now, after half century in the service of our country, I shall lay down the responsibilities of office as, in traditional and solemn ceremony, the authority of the Presidency is vested in my successor. This evening, I come to you with a message of leave-taking and farewell, and to share a few final thoughts with you, my countrymen.

Like every other -- Like every other citizen, I wish the new President, and all who will labor with him, Godspeed. I pray that the coming years will be blessed with peace and prosperity for all.

Our people expect their President and the Congress to find essential agreement on issues of great moment, the wise resolution of which will better shape the future of the nation. My own relations with the Congress, which began on a remote and tenuous basis when, long ago, a member of the Senate appointed me to West Point, have since ranged to the intimate during the war and immediate post-war period, and finally to the mutually interdependent during these past eight years. In this final relationship, the Congress and the Administration have, on most vital issues, cooperated well, to serve the nation good, rather than mere partisanship, and so have assured that the business of the nation should go forward. So, my official relationship with the Congress ends in a feeling -- on my part -- of gratitude that we have been able to do so much together.

We now stand ten years past the midpoint of a century that has witnessed four major wars among great nations. Three of these involved our own country. Despite these holocausts, America is today the strongest, the most influential, and most productive nation in the world. Understandably proud of this pre-eminence, we yet realize that America's leadership and prestige depend, not merely upon our unmatched material progress, riches, and military strength, but on how we use our power in the interests of world peace and human betterment.

Throughout America's adventure in free government, our basic purposes have been to keep the peace, to foster progress in human achievement, and to enhance liberty, dignity, and integrity among peoples and among nations. To strive for less would be unworthy of a free and religious people. Any failure traceable to arrogance, or our lack of comprehension, or readiness to sacrifice would inflict upon us grievous hurt, both at home and abroad.

Progress toward these noble goals is persistently threatened by the conflict now engulfing the world. It commands our whole attention, absorbs our very beings. We face a hostile ideology global in scope, atheistic in character, ruthless in purpose, and insidious [insidious] in method. Unhappily, the danger it poses promises to be of indefinite duration. To meet it successfully, there is called for, not so much the emotional and transitory sacrifices of crisis, but rather those which enable us to carry forward steadily, surely, and without complaint the burdens of a prolonged and complex struggle with liberty the stake. Only thus shall we remain, despite every provocation, on our charted course toward permanent peace and human betterment.

Crises there will continue to be. In meeting them, whether foreign or domestic, great or small, there is a recurring temptation to feel that some spectacular and

costly action could become the miraculous solution to all current difficulties. A huge increase in newer elements of our defenses; development of unrealistic programs to cure every ill in agriculture; a dramatic expansion in basic and applied research -- these and many other possibilities, each possibly promising in itself, may be suggested as the only way to the road we wish to travel.

But each proposal must be weighed in the light of a broader consideration: the need to maintain balance in and among national programs, balance between the private and the public economy, balance between the cost and hoped for advantages, balance between the clearly necessary and the comfortably desirable, balance between our essential requirements as a nation and the duties imposed by the nation upon the individual, balance between actions of the moment and the national welfare of the future. Good judgment seeks balance and progress. Lack of it eventually finds imbalance and frustration. The record of many decades stands as proof that our people and their Government have, in the main, understood these truths and have responded to them well, in the face of threat and stress.

But threats, new in kind or degree, constantly arise. Of these, I mention two only.

A vital element in keeping the peace is our military establishment. Our arms must be mighty, ready for instant action, so that no potential aggressor may be tempted to risk his own destruction. Our military organization today bears little relation to that known of any of my predecessors in peacetime, or, indeed, by the fighting men of World War II or Korea.

Until the latest of our world conflicts, the United States had no armaments industry. American makers of plowshares could, with time and as required, make swords as well. But we can no longer risk emergency improvisation of national defense. We have been compelled to create a permanent armaments industry of vast proportions. Added to this, three and a half million men and women are directly engaged in the defense establishment. We annually spend on military security alone more than the net income of all United States cooperations -- corporations.

Now this conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence -- economic, political, even spiritual -- is felt in every city, every Statehouse, every office of the Federal government. We recognize the imperative need for this development. Yet, we must not fail to comprehend its grave implications. Our toil, resources, and livelihood are all involved. So is the very structure of our society.

In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist. We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together.

Akin to, and largely responsible for the sweeping changes in our industrial-military posture, has been the technological revolution during recent decades. In this revolution, research has become central; it also becomes more

formalized, complex, and costly. A steadily increasing share is conducted for, by, or at the direction of, the Federal government.

Today, the solitary inventor, tinkering in his shop, has been overshadowed by task forces of scientists in laboratories and testing fields. In the same fashion, the free university, historically the fountainhead of free ideas and scientific discovery, has experienced a revolution in the conduct of research. Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. For every old blackboard there are now hundreds of new electronic computers. The prospect of domination of the nation's scholars by Federal employment, project allocations, and the power of money is ever present -- and is gravely to be regarded.

Yet, in holding scientific research and discovery in respect, as we should, we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite.

It is the task of statesmanship to mold, to balance, and to integrate these and other forces, new and old, within the principles of our democratic system -- ever aiming toward the supreme goals of our free society.

Another factor in maintaining balance involves the element of time. As we peer into society's future, we -- you and I, and our government -- must avoid the impulse to live only for today, plundering for our own ease and convenience the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage. We want democracy to survive for all generations to come, not to become the insolvent phantom of tomorrow.

During the long lane of the history yet to be written, America knows that this world of ours, ever growing smaller, must avoid becoming a community of dreadful fear and hate, and be, instead, a proud confederation of mutual trust and respect. Such a confederation must be one of equals. The weakest must come to the conference table with the same confidence as do we, protected as we are by our moral, economic, and military strength. That table, though scarred by many fast frustrations -- past frustrations, cannot be abandoned for the certain agony of disarmament -- of the battlefield.

Disarmament, with mutual honor and confidence, is a continuing imperative. Together we must learn how to compose differences, not with arms, but with intellect and decent purpose. Because this need is so sharp and apparent, I confess that I lay down my official responsibilities in this field with a definite sense of disappointment. As one who has witnessed the horror and the lingering sadness of war, as one who knows that another war could utterly destroy this civilization which has been so slowly and painfully built over thousands of years, I wish I could say tonight that a lasting peace is in sight.

Happily, I can say that war has been avoided. Steady progress toward our ultimate goal has been made. But so much remains to be done. As a private citizen, I shall never cease to do what little I can to help the world advance along that road.

So, in this, my last good night to you as your President, I thank you for the many opportunities you have given me for public service in war and in peace. I trust in that -- in that -- in that service you find some things worthy. As for the rest of it, I know you will find ways to improve performance in the future.

You and I, my fellow citizens, need to be strong in our faith that all nations, under God, will reach the goal of peace with justice. May we be ever unswerving in devotion to principle, confident but humble with power, diligent in pursuit of the Nations' great goals.

To all the peoples of the world, I once more give expression to America's prayerful and continuing aspiration: We pray that peoples of all faiths, all races, all nations, may have their great human needs satisfied; that those now denied opportunity shall come to enjoy it to the full; that all who yearn for freedom may experience its full spiritual blessings. Those who have freedom will understand, also, its heavy responsibility; that all who are insensitive to the needs of others will learn charity; and that the scourges -- scourges of poverty, disease, and ignorance will be made [to] disappear from the earth; and that in the goodness of time, all peoples will come to live together in a peace guaranteed by the binding force of mutual respect and love.

Now, on Friday noon, I am to become a private citizen. I am proud to do so. I look forward to it.

Thank you, and good night.

Analysis

Operation Judgment and The Asaka Maru Affair

Excerpt from Station Point Grey and Very Special Intelligence: Part 2

The Meaning of Scientific Intelligence

During wartime, when it comes to the gathering and decryption of messages, the military needs of the battlefield takes precedence over diplomatic and technical intelligence gathering. And so it has been since at least the time of Julius Caesar. In our modern age, anyone setting off with a “manifest destiny” of becoming a great empire or modern Caesar must however contend with the profound effect science and technology has on modern warfare and States Craft.

This fact was made apparent to Great Britain in the Great War (1914-1918), and to the Allies as a whole during the Second World War, when modern science and technology began to profoundly affect the rapidity and conduct of a global war. How this came into being is outlined in books by Dr. Vannevar Bush [1] and by Dr. R.V. Jones [2]

By 1945 “Special Intelligence” had made its mark, with contributions from the four corners of the world, not the least being the special intercept work done by the men and women at Station Point Grey, on the campus of the University of British Columbia, in Vancouver, BC, Canada (refer to Station Point Grey and Special Intelligence: Part 1).

Scientific Intelligence, in matters relating to radar, electronics, nuclear energy, rocketry, aerospace and advance weaponry came into its own during the Second World War and continued in importance throughout the six decades of the Cold War and to this very day.

As the victors choose to write the history of their successes, so went the history of “Special Intelligence” and the Second World War. The vanquished also managed to have a number of their secrets hidden away during the years of the Cold War. With the demise of the Soviet Empire, more of the history of the 20th century can now be told. The Rt. Hon. Winston Churchill would write his monumental six volume epic history of “The Second World War”, (refer to Fig. 1: Winston Churchill, Ottawa 1941), careful not repeating mistakes and indiscretions made in his previous personal history of the First World War. [3]

In his history of the First World War, Churchill had make mention of the work done by the Room 40 at the Admiralty, a revelation which proved to be controversial. It was nearly four decades after the Second World War cessation of hostilities before the first hints of the ***ULTRA Secret*** became known to the general public [4]

Today we complacently believe that the success of the Allies during wartime was a forgone conclusion. In actual fact from its very beginnings the fate of the Allies hung on a thin wire, and that wire was connected into radio receivers. Special Intelligence, including Scientific Intelligence helped to save the world from disaster.



Fig. 1: Winston Churchill, Ottawa 1941

(This iconic picture of Mr. Churchill was taken in the Speaker's anteroom of the House of Commons, Ottawa following Mr. Churchill's December 1941 speech to Canada's Parliament, Mr. Karsh the

photographer had just taken away Mr. Churchill's cigar, hence the pout)

During the Battle for Britain in the spring of 1940, the Rt. Hon. Winston Churchill, would make famous a tribute

“Never in the Field of Human History, has so much be owed by so many to so few.”

The popular belief is that these words were for the brave pilots who fought during the Battle of Britain, as it was spoken so over the radio in the spring of 1940. As Dr. Gordon Welchman, a mathematician from Cambridge University who did pivotal work at Bletchley Park would state in his 1982 book “The Hut 6 Story, [5] these epic words were meant as much for the silent and invisible army of cryptanalysts and analysts then working at Bletchley, who as a matter of course would, in Churchill's own words be “the goose that lay the golden eggs”.

Churchill would come to rely upon both Special and Intelligence and its most unique offshoot, Scientific Intelligence during the course war both in Europe and in the Pacific. The 1942 Little – Denniston Agreement meant that the intercept being collected at Station Point Grey were available to the Rt. Hon. Winston Churchill's and his War Cabinet in London, as well as FDR's Oval Office, and key Allied Operational Commanders. In actual fact, some West Coast intercept work began well before 1942.

Of interest to Canadians may be the role a remarkable Canadian mathematician from the University of Toronto played in decryption, a revelation that may come as a surprise to many of his students who are still around doing mathematics. Disentangling codes is very much like solving puzzles: Mathematicians are very adept at deriving patterns from quasi-random collections of information.

It need be remembered that to assist in their work, cryptanalysts in the 1940's had at most tabulation machines, and the people themselves were called "computers." The need to plow through countless possible machine settings in the Enigma war is what prompted the design-build of the first advanced "electro-mechanical computers". Analog and some simple electro-mechanical computers were also being used in gun directors and Tracking Data Calculators aboard submarines and naval ships.

The most famous of the cryptanalyst machines were the PURPLE machines developed and built by Arlington Hall and the "Bombes" at Bletchley Park. The "Bombes" were designed by a team of mathematicians, which included Dr. Gordon Welchman and Alan Turing, specifically to plow through a select menu of possible Enigma key settings. The menu had to first be developed by cryptanalysts who looked for specific group rings that tied together three letters in a message. The messages were interpreted by means of cribs or education guesses, which over time became in themselves patterns. A major weakness of Enigma is a letter typed in never returned itself in encryption and so a message that might start with "For the High Command Only" would

never return the same letters and so such exclusion patterns were a weakness that was exploited by Bletchley Park.

Much has been written about the wartime military decrypts, however far less has been written about the diplomatic, technical and commercial decrypts that relate to Scientific Intelligence. This article will look at Special Intelligence how it was used to combat blockage runners and German and Japanese wartime cooperation in radar, aircraft and beginning with ***OPERATION JUDGEMENT***: The Battle of Taranto and subsequent Asaka Maru Affair, and will look at how diplomatic and technical intercepts of messages on the Berlin-Tokyo circuit undertaken by Station point Grey played a crucial role in this undertaking.

The next article in this series will look at German and Japanese wartime developments and cooperation in the field of nuclear energy, as well as Special Intelligence and the final six months of the war in the Pacific (refer to Station Point Grey and Special Intelligence: Part 3).

OPERATION JUDGEMENT: The Battle of Taranto

In 1940 the brave men and ships of Royal Navy were out-numbered, out-gunned and at a disadvantage with regards to the Italian Fleet in the Mediterranean.

To address this imbalance the Royal Navy undertook an audacious plan to attack the Italian Fleet at its moorings in Taranto harbor using carrier based Swordfish biplanes. (refer to Fig. 2 : Swordfish with Torpedo)

The attack, known as OPERATION JUDGEMENT occurred on the night of 11-12 November, 1940, in two waves of 21 Swordfish equipped with torpedoes and bombs (refer to Fig.3 : OPERATION JUDGEMENT Attack on Taranto Harbour, 11-12 Nov., 1940) .



Fig. 2: Swordfish with Torpedo

To attack in such a shallow harbour and anchorage as that at Taranto (12 m), the “boffins” with the Royal Navy had developed a technique to keep aerial torpedoes from diving too deep after their release. The technique involved a drum and wire assembly attached beneath the nose of the Swordfish aircraft,

from which a wire with a high strength and specific Hooke's modulus was attached to the nose of the torpedo.

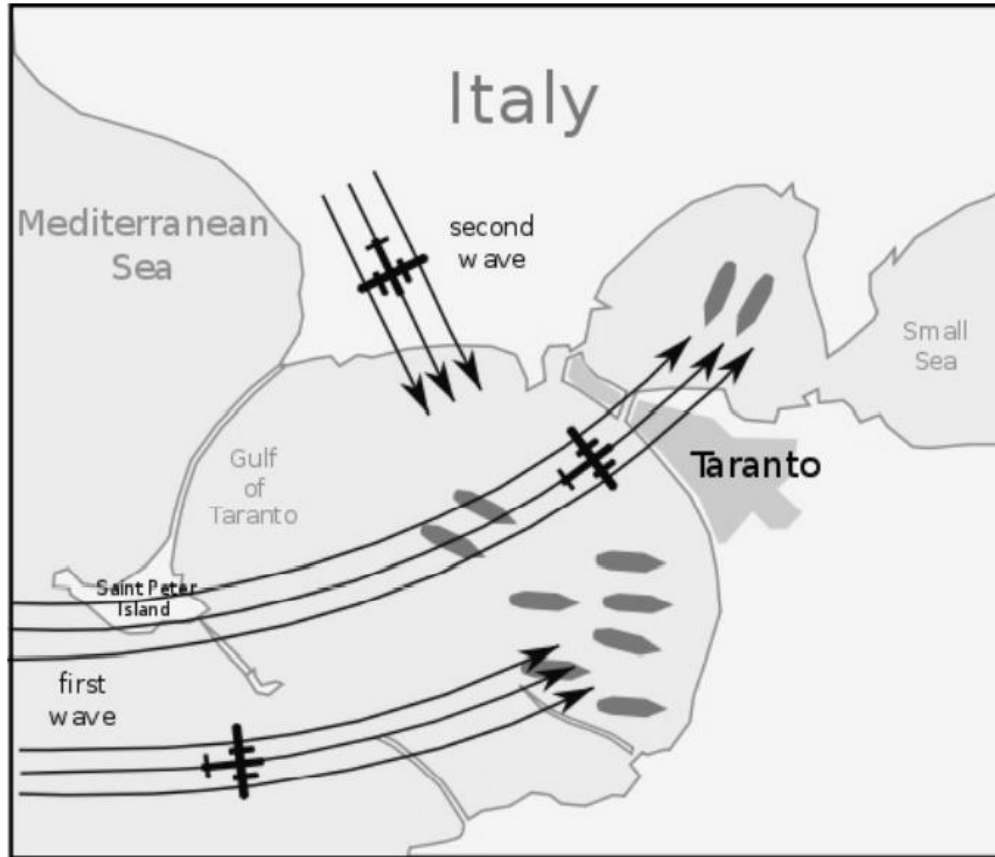


Fig. 3: OPERATION JUDGEMENT Attack on Taranto Harbour,

11-12 Nov., 1940 (Source of Schematic: Wikipedia)

During the attack, the Royal Navy Swordfish aircraft flew in low and slow to their targets, the large battleships of the Italian Navy. As the torpedoes fell from the aircraft the tension of the controlled release of the wire from the drum kept the nose of the torpedo horizontal, producing a controlled entry into the water. At the rear of the torpedo the “boffins” had attached break-away

wooden fins to help ease the torpedo's entry into the water, and help them run true instead of dolphining.

OPERATION JUDGEMENT was a complete surprise and a major victory for the Royal Navy. The Italian fleet lost one battleship destroyed and two damaged in the Raid. Shore facilities were also damaged by bombs. The following day the Italian Navy transferred the remainder of the fleet to Naples to protect against any further air attacks by the Royal Navy. [6] The Taranto Raid bolstered the resolve of the English Speaking world at a time of predominantly dark news. In Tokyo, the raid was viewed with great interest.

In the aftermath of the Taranto Raid, the Japanese Ambassador and his naval staff in Berlin would be asked by Naval Headquarters in Tokyo to make arrangements for a panel of Japanese Naval experts to visit Taranto, and be given full and unfettered access to all intelligence collected by the Italians and Germans from the raid. Berlin, in turn, viewed this as an opportunity to build a closer working relationship with the Imperial Japanese Government in Tokyo.

The Asaka Maru Affair

Shortly after the Taranto Raid, the Japanese Imperial Government sent a team of experts from their Naval Headquarters in Tokyo to Europe aboard the IJN auxiliary cruiser *Asaka Maru*. On her voyage the ship also carried contraband materials to Germany, and would bring back to Japan contraband weapons

and materials, a belligerent act in contravention to established International Maritime Law.

The outbound voyage of the *Asaka Maru* began with its departure from Yokohama on 16 January 1941 under the command of Captain Miura. In addition to her normal crew complement, *Asaka Maru* carries a 40-man "Naval Inspection Group" consisting of 24 naval officers and 16 civilians.

The 40-man "Naval Inspection Group" on their way to Europe included:

- Vice Admiral (later Admiral) Nomura Naokuni (35)
- Rear Admirals Abe Katsuo (40),
- Captain (later Rear Admirals) Sato Namizo (39),
- Captain (later Rear Admirals) Nishina Kozo (44) and
- Captain (later Rear Admirals) Matsuo Minoru (46).

While the *Asaka Maru* was in transit from Japan to Europe via the Panama canal the Japanese Imperial Government asked the War Cabinet in London and the Roosevelt Administration that the *Asaka Maru* not be the subject to search while in transit through the US Administered Panama canal, nor the subject of a boarding and search by the Royal Navy while in transit from Panama to Lisbon Portugal, in that the ship was carrying diplomatic personnel and special cargo.

This mission of the Imperial Japanese Navy auxiliary cruiser would become known as the Asaka Maru Affair and would be discussed at the Cabinet level in both London and Washington beginning the 8th of February, 1940.

Quoting the Cabinet documents itself,

“In the words of Sir R. Craigie, this request for our protection of a ship bearing large numbers of officers going expressively to our enemies in Berlin to organize a joint front against us ‘is in itself impertinent.’”

After cruising 8,000 miles at an average speed of 15 knots, on 7 February 1941, Asaka Maru reaches the Panama Canal. American authorities initially insisted on searching the ship before her transit through the Canal but would relent only after extensive diplomacy.

On February 1941 British Secretary of State for Foreign Affairs, Anthony Eden tabled a Memorandum to the War Cabinet in London that brings attention to their attention the ASAKA MARU. The war Cabinet meets to discuss the matter.

In the following days, Lord Halifax, the British ambassador to the United States, brought the matter of the Asaka Maru up with President Franklin D. Roosevelt. The President and his closest advisors recommended against interception of the Japanese vessel. The Admiralty in Whitehall also recommends against a blockade.

Secretly, Prime Minister Winston S. Churchill asks the Special Operations Executive (SOE)-Far East to study a plan to seize or destroy the ship (Operation "M"). In a series of Cabinet meetings (10, 13, 20 and 24 February, 6 and 13 March), a blockade of Asaka Maru is discussed. In the end Operation "M" is not put in effect.

On 9 February 1941 the *Asaka Maru* departs Cristobal, Panama via the Mona (strait) Passage for a ten day sea voyage across the Atlantic arriving on 20 February 1941 in Lisbon, Portugal, a neutral port. The Naval Inspection group disembarks the ship and travels by train to Berlin, arriving on the February 24th, 1941, where they are briefed by the German Navy and Intelligence about the Taranto Raid.

The Naval Inspection Group then proceeded to Taranto to undertake their own site visit and assessment. The information gathered during their visit to Taranto would prove invaluable in the later attack on Pearl Harbor. Several of the members of this Naval Inspection group would in fact participate in the planning of the December 1941 attack on Pearl Harbor. Parts of at least one un-exploded British torpedo, complete with magnetic exploder, may have also been examined by the Naval Inspection Group. The IJN would copy the break-away wooden fin assembly on the torpedoes they used during their Attack on Pearl Harbor.

While the Naval Inspection Group is on their way to Berlin, *Asaka Maru* departs Lisbon on 24 February 1941 for a short four day journey to Bilbao, Spain. At Bilbao 3,000-tons of contraband munitions and supplies from

Germany and Switzerland, including 20-mm Oerlikon cannons for Zero fighter aircraft, cases of machinery, machine tools, mercury from Italy, and numerous military related electronic devices, are loaded.

The British and Americans, through decrypts and human intelligence, are aware of the contraband cargo being placed aboard the ship. In early March 1941, in response to the contraband cargo aboard the *Asaka Maru*, President Franklin Delano Roosevelt orders every foreign ship passing through the Panama Canal be searched for contraband. Under the new regulations if contraband is found, the ship and cargo are to be seized.

On 13 March 1941 *Asaka Maru* departs Bilbao for Japan via the Cape of Good Hope to avoid the Panama Canal. This change to the route would be in response to the new Panama Canal regulations passed by the Roosevelt administration. The Cape of Good Hope route would double the distance travelled by *Asaka Maru* on its return voyage.

On 22 April 1941, *Asaka Maru* enters Tokyo Bay after cruising 15, 000 miles at an average speed of 15 knots. By the time the *Asaka Maru* had returned to Japan, planning was well underway for the Imperial Japanese Navy for an attack on Pearl Harbor.

In an irony not lost to most historians, the Japanese based their 1941 plan to attack the American ships at Pearl Harbour on plans first set in motion by the US Naval Planning Group in 1932 where a naval task force led by two American Aircraft Carriers under the command of Admiral H.E. Yarnell,

which sailed from California, and undertook a successful mock attack by air on Pearl Harbor. The attacking aircraft had complete domination of the air, and would have sunk or damaged all the ships in Pearl Harbor had the bombs been real. [7]

References:

[1] Dr. Vannevar Bush, *Modern Arms and Free Men*, Simon & Schuster, NY, 1949 [2] Dr. R.V. Jones, *Most Secret War*, Hamish Hamilton Limited, Great Britain, 1978 [3] Winston Churchill, *The Second World War*, Houghlin-Mifflin, Boston, 1949-1951

[4] F.W. Winterbotham, *The Ultra Secret*, Harper & Row, New York, 1974

[5] Gordon Welchman, *The Hut 6 Story: Breaking the Enigma Codes*, McGraw Hill, NY, 1982

[6] In subsequent years the Italian Navy cipher would be the subject of intensive cryptanalysis by Dilly Knoz at Bletchley and would also be purloined by a beautiful secret agent Code Name CYNTHIA working for Bill Stephenson, the Man called Intrepid, and his British Security Coordination (BSC). Access to the Italian Naval Cipher would help the RN to win a tremendous victory over the Italian Navy at the Battle of Matapan in the Mediterranean. Refer to the book by H. Montgomery Hyde, *Cynthia*, Ballantine Books, New York, 1965)

[7] [Blueprint] Erwin Miller, *Blueprint for Pearl Harbour*, in *Secrets and Stories of the War*, Readers Digest, London. 1963

Tradecraft

Thrilling City – Geneva by Ian Fleming

{From *Thrilling Cities* – Chapter Eleven}

To include Geneva among the thrilling cities of Europe must seem to most people quixotic. What about Paris, Istanbul, Venice, for instance? Well, Paris is too big, Istanbul is too Asiatic, and Venice is a cliché. It had crossed my mind to write a joke essay on Venice and discuss the town without ever mentioning the canals, the gondolas, the churches or the piazzas. With a straight face, I would concentrate on the artistic purity of the railway station, the workings of the stock exchange, the intricacies of Venetian municipal finance, the history of the municipal waterworks and power station. I might even have found an erudite explanation in Venetian folk-lore for calling such a very small bridge the 'Bridge of Size'. But apart from perpetrating what, at the best, would have been a pretty damp squib, there is absolutely nothing to say about Venice. It is there, and all that one can tell people is that they should go and see it for themselves. Instead I chose Geneva, clean, tidy and God-fearing, a model city devoted to good causes—the city of Calvin, of the Red Cross, and of the United Nations.

For to me Geneva, and indeed the whole of Switzerland, has a Georges Simenon quality—the quality that makes a thriller-writer want to take a tin-opener and find out what goes on behind the façade, behind the great families who keep the banner of Calvin flying behind the lace curtains in their fortresses in the rue des Granges, the secrets behind the bronze grilles of the

great Swiss banking corporations, the hidden turmoil behind the beautiful, bland face of the country.

As soon as you get over the Arlberg Pass and down into the Vorarlberg (which, incidentally, voted to become a Swiss canton in 1919 but was snubbed by Switzerland), everything is changed. Even the yodelling is different. In Austria and Bavaria, yodelling is light and airy and gay and mixed up with romance. In Switzerland, the yodel has deep undertones of melancholy that sometimes descend into an almost primeval ululation akin to the braying moan of the Alpenhorn—an echoing plaint against the strait-jacket of Swiss morals, respectability and symmetry. For the solidity of Switzerland is based on a giant conspiracy to keep chaos at bay and, where it blows in from neighbouring countries, or pollinates within the frontiers, to sweep it tidily under the carpet.

Switzerland is one great 'Mon Repos' and, to keep this European pension spick and span so that, apart from other considerations, the rates at the lodging-house can remain high, the Swiss Government—which is more of a management than a government—and all the Swiss people labour constantly to keep up a front of cleanliness, order and impeccable financial standing.

This cultivated innocence seems, to the traveler arriving from happy-go-lucky Austria, to verge almost into infantilism in the Swiss-German cantons where the linguistic use of the diminutive rings almost like baby-talk. The diminutive suffix 'li' is everywhere, from the *Bürli*, *Mädli* and, of course, *Kühli* (boys, girls and cows) to the famous *Müsli*, the nature food with which Dr Bircher-

Brenner endeavoured to save the life of Sir Stafford Cripps. My favourite is *Kelloerettli*, a derivation of *quelle heure est-il?* which is Berner-Swiss for a watch. With surroundings clean as the whistle of a Swiss train, soothed by the clonking of the cow-bells, besieged by advertisements for dairy products and chocolate, and with cuckoo clocks tick-tocking in every other shop window, the visitor to Switzerland feels almost as if he had arrived in some gigantic nursery.

In many other respects it is a great refreshment to arrive in Switzerland from any other country in Europe. Here at last you do not have to lock your car when you leave it on the street. There are no beggars, pimps or gangsters. Super petrol from the pump really is super. Privacy is respected and there are no gossip-writers. The lavatories are spotless and the waiters and shopkeepers have that desire to please that is only genuine in a really thrifty nation. In exchange for

this cleanliness and orderliness, you yourself must, of course, conform by also being clean and orderly. Swiss management and officialdom are extremely managerial and officious, and to slip up chaotically by parking your car in the wrong place, leaving the smallest scrap of litter, or failing to have the right kind of ticket on a train may lead to positively magisterial retribution. For the thwarted or affronted Swiss readily goes, as the psychologists say, 'into paroxysm', as any member of the British Ski Club who has offended the guard on a Swiss train will agree. These states of paroxysm—the reaction of the symmetrist to chaos—are signs of the deep psychosis that results from restraint. They are the lid blowing off the pressure-cooker. Statistically,

further symptoms show themselves in the suicide rate, where the Swiss stand fifth in the whole world, with nearly double the suicide rate of the United Kingdom; the divorce rate, which is the fourth highest in Europe; and alcoholism, which, thanks to a partiality for schnapps, is the prime cause of lunacy in the country. In the latter connection, a friend of mine who lives in the old town of Zürich tells me that, on Saturday nights, when the suburbanites and the neighbouring peasants forgather for the weekly lifting of the pressure-cooker lid, the night is made hideous by revelers who do not just fall down when they are drunk but stand outside in the streets and bay at the moon with terrible cries from deep down within their frustrated libidos.

But these tragic manifestations are hushed up (you may not mention suicide as a cause of death in a Swiss newspaper) for the sake of 'Mon Repos', and other human frailties are kept tidy. Extra-marital love, for instance, though it may end in the divorce court, is usually managed with great decorum. It is an understood thing that the Swiss businessman has a mistress, but it is also understood that the mistress shall not be kept in the home town but established in a neighbouring city which the businessman has reason to visit at frequent intervals. And it is typical of Swiss values that Lotte or Lisa shall not be some beautiful odalisque lounging all day on a satin chaise-longue while she dips into a chocolate box and reads the fashion magazines. The Zürich businessman expects his loved one in Berne to earn money in a respectable job, keep their love-nest spick and span, and prepare dainty meals for him when he comes over for the night. She must be a good Swiss citizen as well as a good Swiss mistress. Further, to tidy up the whole picture, abortion is legal in most cantons, though here again the process is respectably formalized.

The girl, of whatever nationality, must first go to a G.P. who will certify that she is not fit to bear a child because her blood pressure is too high or too low, or

because she is physically run down in one way or another. The G.P. will then recommend her to a gynaecologist who, in turn, will recommend her to a clinic, thus spreading the risk and the responsibility—and, incidentally, the financial reward which, through this triangular co-operative, mounts to between £80 and £100. Similarly with gambling. The Swiss are not great gamblers (though I believe it was a Swiss who invented the football pool system) except on the Stock and Bullion Exchanges, but casinos have recently been permitted to operate in most of the large cities on condition that *boule* only is played and the maximum stake shall be five Swiss francs—two conditions that effectively neutralize the vice.

Having thus fragrantized most of the common human weaknesses, there remain money crimes, and these the Swiss have not wished to push under the carpet. Instead they have elevated the crime against the holy franc to be the most heinous in their whole society. They have done this because they really mean it. The Swiss franc is the idol at which all Switzerland worships. A friend of mine who has to listen to the Swiss radio at frequent intervals tells me that there is no bulletin in which francs or Franken do not feature. Cantonal budgets are given down to the last centime, as is the cost of a local library, a football field, or a new apartment house (such local Swiss news is always given before the foreign news of the day). Since the greatest crime in Switzerland is to do something wrong with money, the smallest burglary is pursued relentlessly by the police, and the value of money is one of the prime

pillars of a child's education. If you see a small crowd in the street, it will not be in front of a shop window, but at the window of a bank, all of which give Wall Street prices half an hour after the opening and every hour thereafter.

This mania for money is not new. The Genevese, Henri Dunant, invented the Red Cross, but, in the process of promoting his humanitarian ideas, he let the family business—textile mills in Algeria—go to pot, with the result that he committed the gravest sin that Geneva can conceive of—he squandered capital. Years later, living a pauper's life in the canton of Appenzell, he was awarded the first Nobel Peace Prize. Immediately, though his bankruptcy was thirty years old, his creditors attempted to have the prize seized in settlement of his debt. Dunant managed to stave them off, and when he died in 1910 he left the prize money to charities rather than let a penny go to his family.

The thirst for money is, of course, the chief economic strength of a country that is poor in natural resources and that has, broadly speaking, only services to sell. Originally the Swiss, who had as ferocious a record for fighting as the Scots, hired out their various cantonal armies as mercenaries (the Swiss Guards at the Vatican are the survivors), but in this century they have turned their attention to hotels and sanatoria (with the defeat of tuberculosis they are cannily switching to the modern managerial diseases resulting from stress and tension), and to the creation of the solidest banking system in the world.

The great virtue of Swiss banks is that they are not only solid but secret, and, in the vaults of Zürich, Basle and Geneva lie buried clandestine fortunes worth billions upon billions of pounds. The reason why fugitive money, in its search

for safe repose, has poured into Switzerland in such a continuous torrent, particularly since the war, is due to the sympathy of the government for money which is more or less hot (if it was not, it would not be on the run). In a Swiss bank you may have an account or a safe deposit known only by a number, and this number will be known only by you and by one single director of the bank who may not disclose your identity even to his fellow directors. If, for instance, I. Fleming had such an account and a friend were to send £100,000 to my Swiss bank for the credit of I. Fleming, the bank would deny all knowledge of me and return the money. But if the money were sent to account No. 1234, the receipt of the money would be acknowledged in the normal way. Only if criminal proceedings are started against me in the Swiss courts by the Swiss authorities can the director concerned be subpoenaed and made to reveal the contents of my account or safe-deposit box.

To reinforce this device, heavy federal penalties were imposed by the law of November 8th, 1934 (just in time, be it noted, to welcome the flood of Jewish and German funds fleeing from Hitler), on any breach of banking security. I took the trouble to look up the relevant Article 47B, which lays down:

Whosoever intentionally as organ, official, employee of a bank, as accountant or accountant's assistant, as member of the banking Commission, clerk or employee of its secretariat, violates the duty of absolute silence or the professional secret, whosoever seduces or attempts to seduce others to do so, will be punished with a fine of up to 20,000 Swiss francs or with imprisonment up to six months. Both penalties may be inflicted concurrently.

With these safeguards, and amid the silence of the fir trees that climb the innocent Alps and whisper no secrets to the wind, it is no wonder that Switzerland has been universally acclaimed the safe-deposit box for the world.

The hidden riches of Switzerland cannot be estimated in millions or billions, but *Pick's World Currency Report* gave a clue in a recent examination of the average per capita gold holding in all countries. Switzerland easily leads the field with an average holding of 370 dollars of pure gold per head of the population—more than three times the figure for the American citizen, Fort Knox and all. (I do not wish to give the impression that the Swiss are miserly. Not only is the government most generous in charitable donations abroad, but the International Committee of the Red Cross and the League of the Red Cross Societies, as well as the Swiss Red Cross, are heavily subsidized by Switzerland. Moreover, a host of semi-official and private Swiss charitable organizations contribute vast sums annually towards foreign charitable causes.)

It is not surprising that the protection and further accumulation of this national fortune is an obsession with Switzerland, and the emphasis on privacy and security in the country is perhaps as much to attract money, for ever on the hunt for 'Mon Repos', as for the peace and protection of the citizens. The atmosphere of a well-guarded bank-vault is strengthened by the continued maintenance of war-time tank traps, camouflaged redoubts, and demolition chambers, not only all along the frontiers but on many bridges and other

strategic points throughout the country. (At an intersection on the main road from Nyon to Geneva, for instance, there is a neat villa, window-boxes and, all that reveals itself on closer inspection to be a mighty stressed-concrete pillbox.) Military service is compulsory for all between the ages of twenty and sixty, and every soldier-citizen has to keep his rifle with forty rounds at home so as to be ready to go out and fight in the streets at a moment's notice. Preparations for emergency go to the point where every housewife is required to keep in the larder iron rations, consisting basically of one litre of cooking oil, two kilos of rice and two kilos of sugar per head of the household, and to consume and replace these at regular intervals to keep them fresh. These measures, combined with a powerful, though not very bright, police force, create a glowing picture of law, order and security in a turbulent world. Combined with the honesty, industry and cleanliness of the Swiss, the impression on the foreigner and on foreign capital is little short of paradisaal.

Traditionally a haven for refugees from turmoil and persecution, modern Switzerland has gathered to its bosom a new kind of refugee—the fugitive from punitive taxation. The political refugee still exists in the form of fugitive royal families, Italian, Rumanian, Spanish and Egyptian, together with a handful of sheikhs. These sad orphans of the world's storm, evicted from their palaces, have found shelter in the Palace Hotels along the shores of Lac Lemman, and there hold strictly mediatized tea and bridge parties and are courted by the local snobs.

There are many cranks attached to this fusty world of ex-kings and queens, including, in Lausanne, one bizarre sect, about thirty strong, that worships our queen. The members believe that Queen Elizabeth is a descendant of the biblical King David, and that she will reign over the world and bring about the millennium. This world rule will have its headquarters in Lausanne where the sect has set up a 'temple' over a garage and decorated it with bright rainbow coloured draperies and a large red-leather armchair which is to be her throne. A similar but smaller chair awaits Prince Charles. Members of the sect take it in turns to fast for twenty-four hours at a time while awaiting Her Majesty's arrival. The leader, a certain Frederick Bussy, is a bearded gentleman in his late forties who wears white robes embroidered with the British royal coat of arms, and records the prophecies of the sect on a dictaphone for typing and posting to world leaders. Monsieur Bussy is particularly proud that Her Majesty appears to take note of his requests. He told a reporter, 'We suggested Her Majesty should choose King Edward's throne for her coronation and she did so.'

A host of British and American actors and writers are the Voltaires, Rousseaus and Mesdames de Staël of today— Charlie Chaplin, Noël Coward, Ingrid Bergman, Richard Burton, Peter Ustinov, Yul Brynner, William Holden, Georges Simenon, Mel Ferrer and Audrey Hepburn among them. I stayed with Noël Coward near Montreux, and there my wife joined me. Noël Coward is, besides being a friend, one of my heroes, and I was disgusted by the hullabaloo in the press—but not, I think, among his public—when some years ago, instead of allowing him to go slowly bankrupt, his lawyer persuaded him to reside outside England and stay alive. I will not weary my readers with the

details of his case, but I have a basic alteration to propose in our tax laws which I will call, so that it looks properly portentous on the statute books, the *Quantum of Solace* Clause. Briefly, this will allow tax relief to those who, as judged by an independent tribunal, have given the maximum amount of pleasure to their fellow citizens. Most beneficiaries will, of course, come from the creative arts—acting, writing, painting, music, etc—but they will also come from sport, politics and medicine. Such a clause would, I believe, have the blessing of the general public, it would greatly encourage the arts, and it would serve to keep creative ability within our shores (copy to the Inland Revenue for action!).

Noël Coward arranged a dinner party for us with his neighbour, Charlie Chaplin, and it was a dazzling experience to spend a whole evening with the two people who have made me laugh most of all in my life. Charlie Chaplin lives in a handsome eighteenth-century house in a large, well-treed park above Vevey, with furniture unremarkable but appropriate, both comfortable and 'lived with'. There is no pretension anywhere except perhaps in the glasses at dinner. Charlie Chaplin hates them. They are Venetian and spidery, with gold rims, and Charlie Chaplin described how, on a visit to Venice, for all his efforts to avoid the experience, he and his wife were gondolaed off 'to that damned island where they blow glass'. He blew realistically until he was red in the face. 'And they made me, absolutely made me, spend about a thousand dollars on this junk.' He waved a hand. I was absolutely furious at falling into the trap.' Much of the success of the evening was due to Oona, his beautiful young wife, the daughter of Eugene O'Neill. She has borne him seven children

in the seventeen years of their marriage. It is wonderful to see two people bask unaffectedly in each other's love, and the relationship lit up the evening.

Charlie Chaplin, in a plum-coloured smoking-jacket which, he said, he wore because it made him feel like a millionaire, exuded vitality tempered with the deprecation and self-mockery one expects from him. After dangerously skirting politics over the matter of Caryl Chessman's execution (though he was disgusted with it, Chaplin said that, by his death, Chessman had achieved more for mankind than any other man since the war), we got on to *Ben Hur*, which Chaplin, who practically never goes to films or theatres and does not own a television set, had not seen. Chaplin immediately became airborne. He was going to make a really great film, it would be a mixture of half a dozen spectacles—*Ben Hur*, *Anna Karenina*, *South Pacific* and others. It would be *Around Romance in 80 Days*. Certainly he would put in the chariot race. The villain with the big knives on his chariot wheels would overhaul the hero, 'a chap called Gulliver or Don Quixote or one of those'. As the villain came alongside, the hero would nonchalantly hold out a side of ham which the knives on the chariot wheels would cut into thin slices which the hero would eat and gain strength so that he would win the race. All this splendid mirage was illustrated with unceasing dumb crambo.

More seriously, he said that he would make one more 'Little Man' film. My wife suggested that the theme should be 'the little man who had never had it so good', and Chaplin seized the idea and tucked it away. He next enlivened us with a

graphic account of being invited by the Duke of Westminster to a boar hunt in France, of the clothes he had had to borrow and how his horse had run away with him. And then he was off again, brilliantly 'fed' by Noël Coward, into memories of his early days on the boards in England, of the great actors and actresses he had worshipped, and of his own struggles and first notices.

He is now writing his memoirs. He works every day from eleven to five and has finished nine hundred pages. On that day, there remained only twenty pages to go. He complained of being bedevilled by his Swiss secretary who constantly tried to improve his English. He said he was not surprised, as he had taught himself the language and suspected that his secretary knew it far better than he did, but, even so, he liked his own version and hoped that some of what he had actually written would survive the process of editing by his publishers. We all, of course urged him to reject any kind of editorial censorship or correction, but his modesty will, one fears, allow Big Brother's blue pencil to wreak its havoc. (How much better those who 'don't write' write than those who do—Lord Attlee, Lord Moran, Viscount Montgomery and, latterly, Ralph Richardson!) The evening had to end. It is wonderful when one's heroes in the flesh are even better than in the imagination.

It was the time of the Narcissus Festival, and the fields around Noël Coward's house (which he has not, after all, called 'Shilly Chalet') were thick with the flowers that were to line my route round Europe—tulips in Holland, lilac in Vienna, narcissi in Switzerland and, later, bougainvillaea and hibiscus in Naples. Alas, I had to forsake these innocent Alps (what is the definition of an Alp, by the way, and when does an Alp become a Berg?) and spend my

days in Geneva —Voltaire's 'shining city that greets the eye, proud, noble, wealthy, deep and sly'.

Geneva is far, far wealthier than it was in Voltaire's day when, as the Duc de Choiseul, Madame de Pompadour's foreign minister, advised, 'If you see a Genevese jump out of the window, jump right after him. There is fifteen per cent to be gained.' Today, its economy bulging with the wealth of countless international organizations and of big foreign businesses attracted by tax advantages, such as Chrysler and Dupont, with a quarter of its residents foreigners and well over a million tourists every year, the town is bursting at the seams, and the small population of true Genevese—about fifty thousand—have a hard time trying to avoid being overlaid by the giant golden calf for whom, originally with enthusiasm but now with very mixed feelings, they provide pasture.

\Parking a car in any city these days is almost impossible. In the centre of Geneva it is totally so. Hunting round and round like a mouse in a trap, it crossed my mind that, for the motorist, 'P' has become the most desirable letter of the alphabet. How blessed it is to be able actually to stop and get out of the car and leave it without the fear of a torrent of abuse when you return to it! So far as Geneva is concerned, the only hope is for them to build vast parking places out over the famous lake.

This beautiful lake, plus the highest fountain in the world and the Rhône that thunders so majestically through the town—all this and Mont Blanc too, do not make Geneva a happy town. The spirit of Calvin, expressed in the ugly

and uncompromising cathedral that dominates the city, seems to brood like a thunderous conscience over the inhabitants. In the rue des Granges adjoining the cathedral, the great patrician families, the de Candoles, de Saussures, Pictets, set a frightening tone of respectability and strait-laced behaviour from which the lesser Genevese take their example. The international set—the delegates, staffs of the various organizations and staffs of foreign businesses—do not penetrate even the fringes of Genevese society. They even mix poorly among themselves. The lack of adjustment between the resident Americans, for instance, and Geneva life is such that a booklet—an excellent common-sense one, by the way—has been prepared at the behest of the President of the American Women's Club of Geneva and the Chief of the Mental Health Section of the World Health Organization, to prepare Americans coming to work in Geneva for what is described as 'Culture Shock'—the impact of the European way of life on an American.

The chief trouble is the language problem, closely followed by the business of bringing up children. In Geneva, as in the rest of Switzerland, Swiss children have butter or jam for tea. Swiss children are not allowed to go to most films until they are eighteen, and even the harmless Danny Kaye is forbidden to children until they are sixteen, to be proved by the presentation of identity cards. When a Swiss child comes back from a party, he or she is asked, 'Were you good?' whereas the American parent will ask, 'Did you have a good time?' The Swiss mother finds it difficult to make adult conversation to a foreign mother because only in 1960, and by a very narrow majority, did Swiss women obtain the vote, and then only in a minority of the cantons. Finally, the general values and moral judgments of the Swiss have hardly

developed since 1914, whereas the foreigners' have been turned inside out by two world wars.

But, above all, it is the reserve of the Genevese that chills those many Americans who so much want to be loved (the British don't particularly expect to be liked, or are too obtuse to notice if they aren't). It was this reserve, this holier than-thou attitude, that Voltaire endeavoured to dynamite in his constant forays against Calvinism. Today it is only the giant scandal that can fracture the smugness. Fortunately, from time to time, the Lord who, I have always believed, has little sympathy for Calvinism, visits just such a scandal upon Calvin's present-day disciples. The echoes of such a visitation were still rumbling when I was in Geneva in May 1960—the case of Pierre Jaccoud, Geneva's senior lawyer, head of the Bar Association and chief of the all-powerful Radical Party in the town, and it was a real grand slam in scandals.

The story is this: on May 1st, 1958, an elderly man, Charles Zumbach, was found shot and stabbed in his house on the outskirts of Geneva. His wife, on returning from a church meeting that night, was shot at and wounded by the murderer whom she described as a tall, dark man wearing a dark suit who had dashed out of the house and made his escape on a black bicycle. It was a headline story, but no headlines were black enough for the sensational arrest of Maître Pierre Jaccoud a month later on the charge of murder.

The scandal developed swiftly. It was revealed that, shortly after the murder, Jaccoud had gone to Stockholm and had his hair bleached, that he had tried to take poison during the police investigation, and that he had had a mistress,

Linda Baud, a secretary at Radio Geneva. All this of one of Geneva's sons who had been nicknamed 'Calvin' at school because of his puritanical nature; of a lawyer who had counted Aly Khan, Sacha Guitry and I.G. Farben among his clients, of a Director of the Conservatoire de Musique and of the Orchestre de la Suisse Romande, of a Municipal Councillor and Deputy of the Grand Conseil of Geneva—worse, of a man who lived in a street that abutted on the rue des Granges!

It turned out that Jaccoud had met Linda Baud, then in her twenties, at an official dinner when, as his lawyer claimed, 'he was ready to love like a schoolboy, never having loved as a schoolboy'. The affair lasted ten years, with passionate ups and downs. His wife knew all about it but did nothing for fear of offending the conventions, and, when it ended, Madame Jaccoud, worn down by those 'meals heavy with silence', took him back and the marriage was mended.

Unfortunately, in the summer of 1957, Linda Baud took another lover, a young technician from Radio Geneva called André Zumbach, to whom, out of jealousy, Jaccoud wrote anonymous letters. They were sordid ones:

I have heard that you are a friend of Linda Baud and feel you should be informed of what is going on. After having been the mistress of a barkeeper, then of one of the employees of your organization, not to mention a number of other adventures, she has been the mistress of a married man for several years. I have just heard that she has relations with someone very dear to me. I saw them together on the 17th August

and found by chance a most edifying photograph of the way they spend their time. I am enclosing this photo.

[Signed] 'SIMONE B.'

The photograph was one of Linda Baud naked which, she claimed, Jaccoud had taken of her at pistol point one evening in the grimy little room they had used for their affair. André Zumbach accused Jaccoud of sending these letters and the prosecution maintained that Jaccoud, frightened by the accusation, had gone to Zumbach's home to kill André Zumbach and get the letters back. Surprised by the father, Jaccoud had shot him and, panicking, had also shot the mother.

The trial, in March 1960, lasted three weeks and was enlivened by the production of five hundred love-letters from Jaccoud to Linda Baud, the discovery of a Moroccan dagger, showing traces of blood and liver cells, at Jaccoud's home, and of a button, found on the scene of the crime, of an English raincoat parceled up in Jaccoud's apartment to be sent to the Red Cross. To heighten the drama, the Public Prosecutor was a great friend of Jaccoud and they broke out into 'tu' in the court—the court where Jaccoud himself had so often pleaded. The judge also knew the accused, and the defence lawyers were old friends. The Public Prosecutor himself admitted acquaintance with Linda Baud, and the drama was intensified by the appearance of a famous Paris lawyer, René Floriot, for the defence, who spread mud still more widely over Geneva, to the fury of the inhabitants.

Finally, with the natural respect of the Genevese for authority, titles and high society torn to shreds, Jaccoud was convicted and sentenced to seven years, subsequently reduced to three.

Such cases—the Dubois espionage affair of 1957 was another one—burst upon the Swiss scene with all the greater impact because, though sordid crimes occur in every other country of the world, they really should not disturb a society that has 'Mon Repos' as its motto. These scandals have no more impact abroad than any other headline murder story, but, among the Swiss, it is as if a corner of the lid of the great pressure-cooker had lifted to emit a poisonous jet of steam—a whiff from the great cauldron of human chaos that is the supreme enemy of the symmetry that is Switzerland.

Much, far too much, I fear, of what I have written will seem critical of the Swiss and of their surpassingly beautiful country. Yet it is not my wish to be critical, but merely to examine, to look beneath the surface of a country that holds so much more mystery than those that wear their hearts and psychoses on their sleeve. I was partly educated in Switzerland —at the University of Geneva where I studied Social Anthropology, of all subjects, under the famous Professor Pittard. I was once engaged to a Swiss girl. I am devoted to the country and to its people and I would not have them different in any detail. But, as I said at the beginning, Switzerland has a Simenon quality, an atmosphere of still-water-running-deep, which is a great temptation to the writer of thrillers. If I have revealed a wart here and a wen there and poked mild fun at the reserved, rather prim face Switzerland presents to the world,

this is because the mystery writer enjoys seeing the play from back-stage rather than from out front, in the stalls.

To conclude, I will draw the veil aside from one last Swiss secret that, amongst all, the world has perhaps found the most baffling: Swiss cheese has holes in it because, in the process of making Gruyère and Emmental, carbon dioxide is formed and, as the cheese solidifies, the bubbles remain.

* * *

INCIDENTAL INTELLIGENCE

Hotels

Hotels in Geneva are usually top-heavy with conference delegates. This applies even to winter-time and even to conferences no one has ever heard of.

Luxury hotels are growing like mushrooms, but the *Richmond* and the *Hôtel des Bergues* are particularly favoured by visiting high society and statesmen, while the newer *Hôtel du Rhône* is more frequently chosen by business magnates and sheikhs.

For another type of luxury: quiet, remote lakeside setting and the atmosphere of a country manor, there is the less known *Clos de Sadex*, near Nyon, twenty-five kilometres outside the town on the Route Suisse leading to Lausanne, and therefore only recommended to the motorised. The *Clos de Sadex* is run by

English-speaking Mr. and Mrs L. de Tscherner who have transformed their own home into a first-class residential hotel and who loan their own motor boat for lake excursions.

A picturesque but not inexpensive retreat in Geneva itself is the *Hôtel Lamartine*. This is an 'authentic' chalet in its own garden at Champel, chemin des Clochettes; it is mentioned in the Guide Michelin and caters mainly for bed-and breakfast customers.

Less money to spend? There is a pleasant pub-style pension on the lakeside a kilometre or so outside Geneva at la Belotte, chemin des Pêcheurs, the *Hôtel de la Belotte*. A limited number of rooms and the inconvenience of Sunday of lunchers who come *inter alia* for *perches du lac*, a fresh-water fish speciality.

Restaurants

The gastronomic delights of Geneva are slightly overshadowed by the vicinity—within fifty kilometres—of *Le Père Bise*, one of France's three best restaurants, at Talloires, just after Annecy.

Inside Geneva the *Béarn*, quai de la Poste, is the uncrowned king of local restaurants. After that the choice is vast and interesting, and advice will be tendered from every side.

For fondue bourguignonne, a local speciality, *Le Chandelier*, 23 Grande Rue, in the old city, ranks high. This fondue consists of portions of cut-up raw steak which you impale on a stick and cook yourself in boiling oil and butter at the table. It is served with a variety of sharp sauces.

Cheese fondue is rarely served in summer and it tastes better in any brasserie than in a restaurant. I always feel that this cheese-and-white-wine speciality takes the limelight from an even tastier speciality: raclette. Raclette is merely toasted cheese. But what toasted cheese! The performance takes place at an open fire and the chef scrapes the melted cheese straight from the fire on to a numbered plate: yours. You are automatically served with a fresh portion on the same easily identified plate until you beg for mercy. Raclette should be eaten in the mountains before the fresh cheeses and the cows come down to the valley. In Geneva the *Café du Midi*, round the corner from the *Hôtel des Bergues*, has a cellar, or carnotzet, which specializes in raclette—if you can stand the heat.

It is cooler, less picturesque, and the raclette or fondue is just as good when served in a café called *Le Bagnard*, place du Marché, Carouge. The word Bagnard comes from Bagne cheese and not from a convict past in the café ownership.

I hope habitués will forgive me for giving away the name of a bistro which serves excellent meals and charges according to the size of the portion asked for: *Chez Bouby*, rue Grenus 1.

At the other extreme, as a preliminary to night-clubbing, the only place where it is possible to dine to music and dance is the *Gentilhomme*, which belongs to the *Richmond*. (Incidentally all restaurants, including the Béarn, must be looked up in the telephone directory for booking purposes under the word 'café', for reasons unknown.)

Night-clubs are numerous, cheaper than in England and as naughty as those in Paris, hope the Genevese.

The *Bataclan*, run by Madame Irène, is famous for its strip-teasers. The floor show here is one reason why German Swiss, less privileged at home, find business visits to Geneva quite essential.

La Cave à Bob, in an old town cellar, also has strip-teasers, chansonniers, and tries to be reminiscent of St- Germain-des-Prés. The *Moulin Rouge* usually has extremely good attractions from Paris and even New York.

With a star show, night-clubs charge an entry fee of up to ten francs. Otherwise a whisky or a shared bottle of vin blanc can last you till 2 a.m. at a cost of about 10s. per person. It is of course possible and easy to spend more.

***For Your Eyes Only* by Ian Fleming**

This novel is somewhat different than previous Fleming novels in that it is not a novel at all but a group of vignettes, or short stories, published together. Only one of the series is long enough to be considered a novella. It is the short story *Risco*, which ends up as the central plot of the film *For Your Eyes Only* which came out in 1981.

From the short story *A View to a Kill* Bond investigates the murder of a motorcycle dispatch-rider and the theft of his top-secret documents by a motorcycle-riding assassin. I do not believe this short story has been used yet in any way, shape, or form in any of the Bond films.

In the short story *For Your Eyes Only* Bond avenges the murder of M's closest friends, the Havelocks, by a group of Cubans. Their death is also avenged by the Havelock daughter, as well as by James Bond who happens upon the Havelock girl just as Bond is about to terminate the conspirators to the Havelock murders. She ends up killing her parent's Cuban murderer in a very medieval fashion, while Bond takes out the gang's leader and other gunmen. This short story is used, with significant modification, as a sub-plot in the 1981 film *For Your Eyes Only*.

In the story *Quantum of Solace* Bond is told a story of a failed marriage with an emotive twist. Again, I do not believe this short story has been used yet in any way shape or form in any of the Bond films. The title, *Quantum of Solace*, on the other hand, is used in a Bond film starring Daniel Craig. The style of

this story is very different from other Fleming short stories and is reminiscent of the writing style of Fleming's friend Roald Dahl.

In the short story *Risico* Bond investigates a drug-smuggling operation run in the Mediterranean with ties in Italy and Great Britain, with ties to the Soviets. This short story is the central plot in the film *For Your Eyes Only*. It has mention of Greek islands, smugglers and Albanians.

In the short story *The Hildebrand Rarity* Bond helps find a rare and very deadly fish for an obnoxious millionaire who is subsequently murdered by someone who uses the deadly fish. Again, I do not believe this short story has been used yet in any way, shape, or form, in any of the Bond films.

There is something rather wonderful hidden away in the heart of the book *For Your Eyes Only* and it is in both the mention of the Greek Island of Corfu and the Albanian angle to both the novel and the film.

The Corfu – Albanian theme was drawn from Fleming's newspaper clipping files and an international incident that occurred in 1946 known as the Corfu Channel Incident.

The Corfu Channel Incident involved three separate incidents in the channel between Italy and Albania in 1946. The Corfu Channels is between the Greek island of Corfu and Albania.

The first event involved the shelling from Albania of two RN ships, the light cruisers *HMS Orion* and *HMS Superb* as they transited through the Corfu Channel on May 15th, 1946. No damage was inflicted in the two ships and no casualties occurred. The UK government lodged an official protest and asked for an immediate and full apology from the Albanian Government. No apology was forthcoming, the Albanians claiming that the RN ships had sailed through their territorial waters.

The Corfu Channel between the Island of Corfu and Albania

The second incident occurred on October 22nd, 1946 when a RN flotilla led by the cruisers *HMS Mauritius* and *HMS Leander* along with destroyers *HMS Saumarez* and *HMS Volage* proceeded north bound in the Corfu Channel to exercise the right to innocent passage. Naval Mines had been set in the channel by the Albanians and both destroyers struck mines.

Both ship's struck mines on their bows, first HMS *HMS Saumarez* which was taken in tow by *HMS Volage*, before *HMS Volage* was itself struck by a mine. In the case of *HMS Volage* had her bow completely blown away by the naval mines. The two ships had to be taken under tow. *HMS Saumarez* was a write-off while *HMS Volage* was repairable.



HMS Saumarez bow down under tow by HMS Volage after striking a mine

There were fatalities and injuries in the second incident. Forty five men died and forty two men were injured aboard the two RN destroyers as a result of the Albanian naval mines. Forty three of the men died on *HMS Saumarez*.

The third and final incident in the Corfu Channel occurred on 12 November – 13 November 1946 when the Royal Navy carried out a comprehensive mine sweeping operation in the Corfu channel, codenamed OPERATION RETAIL.

Under the command of the Allied Naval Commander (Mediterranean) the mine-sweeping operation took place both within the Corfu Channel and within the territorial waters of Albania, but without their authorization. Along with clearing the mines, OPERATION RETAIL had the additional purpose of collecting mines as evidence and using the evidence (as corpora delicti) to prove that a crime had occurred and that the British were acting in self-defense by attempting innocent passage and by attempting to clear hazards to navigation.

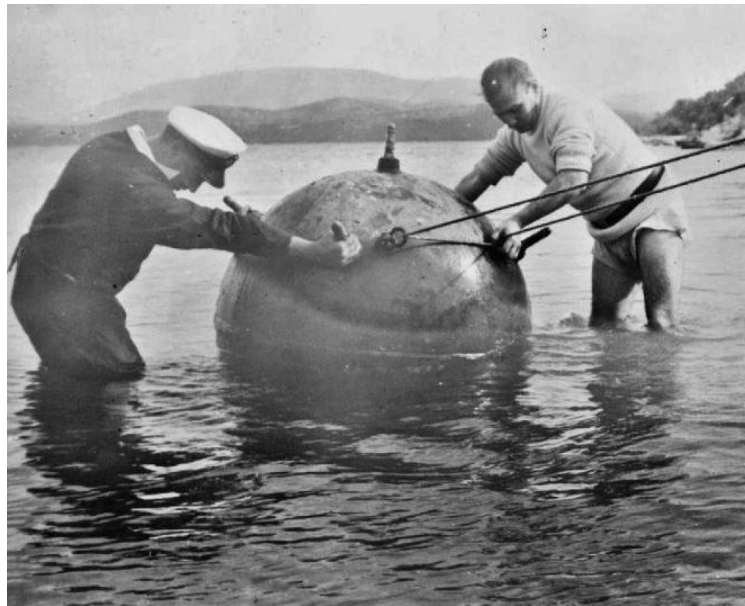


HMS Volage with its bow blown off

During OPERATION RETAIL the aircraft carrier HMS commanded by Captain, later Admiral of the Fleet, Sir Caspar John), cruisers and other smaller warships provided cover. Minesweepers discovered twenty-two contact mines were discovered, and cut-away from their undersea moorings.

The exact placement of the mines was such that the minefield was deemed to have been deliberately designed and not simply a random sewing or aggregation of isolated mines. Two of the cut mines were sent to the RN base on Malta for further examination.

It was then discovered that the mines were of German origin but they were free of rust and marine growth. They were also freshly painted and their mooring cables were recently lubricated. They were not mines left over in the ocean from the Second World War but of more recent placement.



Recovery of a mine from the Corfu Channel by RN clearance divers

A Court of Inquiry concluded that the minefield in the Corfu Channel was laid shortly before the incident involving *HMS Saumarez* and *HMS Volage*. Mine

fragment analysis taken from *HMS Volage* confirmed the mine they struck was similar to the recovered mines at Malta.

At the time the Albanians did not mine laying ships and it was suspected the naval mines had been set in place by two Yugoslavian minelayer ships *Mljet* and *Meljine* under the command of the Albanian navy, on or about the 20th of October 1946.

The *Film For Your Eyes Only* begins with the Royal Navy losing a spy ship the *St. George* to a naval mine set in the sea off the Albanian coast. The film makers included this scene to tie the Bond story to the Corfu Channel Incident.

When the film came out the matter of innocent passage and naval mines were a contemporary issue. There was a war going on between Iran and Iraq and naval mines were being sown throughout the Persian Gulf. Innocent passage of oil bearing tankers through the Strait of Hormuz was being threatened.

During the Iran-Iraq war over 500 commercial ships were affected and some even struck by mines of differing sizes. The shallow bottom of the Strait of Hormoz (less than 100 metres deep) made it an easy region for moored contact mines, as well as bottom mines using magnetic or pressure fuses. This period of the Iran-Iraq war was known as the Tanker War, since many of the ships struck by the mines were tankers. I have included an article about the Tanker War as an Appendix in this book.

I will end this prologue to *For Your Eyes Only* by reminding the reader that what Winston Churchill once said:

“The battle of the Atlantic was the longest battle of the Second World War and the only battle I worried we might lose.”

The Battle of the Atlantic was not merely a battle of battleships and U-boats it was a war that included naval technology like naval mines. The story as to how the German naval mines were defeated by the Royal Navy and its allies has been told in a number of books and films.

You the reader should be mindful that as deputy director of naval intelligence for the Royal Navy, the naval technology war with Germany was one of the many things that directly involved Ian Fleming and his colleagues, whether that naval technology war was over coded messages, radar, submarine design and capability, acoustical torpedoes or magnetic mines.

The Germans dropped magnetic mines by aircraft into the Thames estuary on the first day of the war and one of the first maritime casualties was a ship proceeding to London up the Thames. One of these mines was discovered in the mud and was defused and studied. It took the Royal Navy a great deal of courage and ingenuity to defeat the Germans at their mine technology.

One of Ian Fleming's most clandestine operations of the Second World War was to send naval clearance divers by X – submarines to the beaches of

Normandy prior to OPERATION OVERLORD to check for mines and special hazards.

One particular mine was deemed so dangerous that it was only after the Germans themselves decided to take them out of the water for refurbishment in late May, 1944 that the allies deemed it safe to proceed with the Normandy Invasion. Several naval clearance divers had in fact died in the spring of 1944 trying to recover one of these mines for study back at their naval base. Supposedly the mines in question were made out of glass and had a chemical fuse.

How did the allies know that the mines were being taken out for refurbishment? They had read of this in one of the secret messages sent from Berlin to Tokyo by Ambassador Oshima. The decryption of this secret message was done at Bletchley Park and Arlington Hall off messages taken out of the air by intercept operators at Station Point Grey in Vancouver.

Perhaps I will write something about this remarkable clandestine operation to the Normandy beaches, as well as Station Point Grey, in a future book in *The Best of Ian Fleming* series.

For Your Eyes Only

{ Chapter Two – *For Your Eyes Only* }

The most beautiful bird in Jamaica, and some say the most beautiful bird in the world, is the streamer-tail or doctor humming-bird. The cock bird is about nine inches long, but seven inches of it are tail—two long black feathers that curve and cross each other and whose inner edges are in a form of scalloped design. The head and crest are black, the wings dark green, the long bill is scarlet, and the eyes, bright and confiding, are black. The body is emerald green, so dazzling that when the sun is on the breast you see the brightest green thing in nature. In Jamaica, birds that are loved are given nicknames. *Trochilus polytmus* is called ‘doctor bird’ because his two black streamers remind people of the black tail-coat of the old-time physician.

Mrs. Havelock was particularly devoted to two families of these birds because she had been watching them sipping honey, fighting, nesting and making love since she married, and came to Content. She was now over fifty, so many generations of these two families had come and gone since the original two pairs had been nicknamed Pyramus and Thisbe and Daphnis and Chloe by her mother-in-law. But successive couples had kept the names, and Mrs. Havelock now sat at her elegant tea service on the broad cool veranda and watched Pyramus, with a fierce ‘tee-tee-tee’, dive-bomb Daphnis who had finished up the honey on his own huge bush of Japanese Hat and had sneaked in among the neighbouring Monkeyfiddle that was Pyramus’s preserve. The two tiny black and green comets swirled away across the fine acres of lawn,

dotted with brilliant clumps of hibiscus and bougainvillea, until they were lost to sight in the citrus groves. They would soon be back. The running battle between the two families was a game. In this big finely planted garden there was enough honey for all.

Mrs Havelock put down her teacup and took a Patum Peperium sandwich. She said: 'They really are the most dreadful show-offs.'

Colonel Havelock looked over the top of his *Daily Gleaner*. 'Who?'

'Pyramus and Daphnis.'

'Oh, yes.' Colonel Havelock thought the names idiotic. He said: 'It looks to me as if Batista will be on the run soon. Castro's keeping up the pressure pretty well. Chap at Barclay's told me this morning that there's a lot of funk money coming over here already. Said that Belair's been sold to nominees. One hundred and fifty thousand pounds for a thousand acres of cattle-tick and a house the red ants'll have down by Christmas! Somebody's suddenly gone and bought that ghastly Blue Harbour hotel, and there's even talk that Jimmy Farquharson has found a buyer for his place—leaf-spot and Panama disease thrown in for good measure, I suppose.'

'That'll be nice for Ursula. The poor dear can't stand it out here. But I can't say I like the idea of the whole island being bought up by these Cubans. But Tim, where do they get all the money from, anyway?'

‘Rackets, union funds, Government money—God knows. The place is riddled with crooks and gangsters. They must want to get their money out of Cuba and into something else quick. Jamaica’s as good as anywhere else now we’ve got this convertibility with the dollar. Apparently the man who bought Belair just shovelled the money on to the floor of Aschenheim’s office out of a suitcase. I suppose he’ll keep the place for a year or two, and when the trouble’s blown over or when Castro’s got in and finished cleaning up he’ll put it on the market again, take a reasonable loss and move off somewhere else. Pity, in a way. Belair used to be a fine property. It could have been brought back if anyone in the family had cared.’

‘It was ten thousand acres in Bill’s grandfather’s day. It used to take the busher three days to ride the boundary.’

‘Fat lot Bill cares. I bet he’s booked his passage to London already. That’s one more of the old families gone. Soon won’t be anyone left of that lot but us. Thank God Judy likes the place.’

Mrs. Havelock said ‘Yes, dear’ calmly and pinged the bell for the tea-things to be cleared away. Agatha, a huge blue-black Negress wearing the old-fashioned white head-cloth that has gone out in Jamaica except in the hinterland, came out through the white and rose drawing-room followed by Fayprince, a pretty young quadroon from Port Maria whom she was training as second housemaid. Mrs. Havelock said: ‘It’s time we started bottling, Agatha. The guavas are early this year.’

Agatha's face was impassive. She said: 'Yes'm. But we done need more bottles.'

'Why? It was only last year I got you two dozen of the best I could find at Henriques.'

'Yes'm. Someone done mash five, six of dose.'

'Oh dear. How did that happen?'

'Couldn't say'm.' Agatha picked up the big silver tray and waited, watching Mrs. Havelock's face.

Mrs. Havelock had not lived most of her life in Jamaica without learning that a mash is a mash and that one would not get anywhere hunting for a culprit. So she just said cheerfully: 'Oh, all right, Agatha. I'll get some more when I go into Kingston.'

'Yes'm.' Agatha, followed by the young girl, went back into the house.

Mrs. Havelock picked up a piece of petit-point and began stitching, her fingers moving automatically. Her eyes went back to the big bushes of Japanese Hat and Monkeyfiddle. Yes, the two male birds were back. With gracefully cocked tails they moved among the flowers. The sun was low on the horizon and every now and then there was a flash of almost piercingly beautiful green. A mocking-bird, on the topmost branch of a frangipani, started on its evening

repertoire. The tinkle of an early tree-frog announced the beginning of the short violet dusk.

Content, twenty thousand acres in the foothills of Candlefly Peak, one of the most easterly of the Blue Mountains in the county of Portland, had been given to an early Havelock by Oliver Cromwell as a reward for having been one of the signatories to King Charles's death warrant. Unlike so many other settlers of those and later times the Havelocks had maintained the plantation through three centuries, through earthquakes and hurricanes and through the boom and bust of cocoa, sugar, citrus and copra. Now it was in bananas and cattle, and it was one of the richest and best run of all the private estates in the island. The house, patched up or rebuilt after earthquake or hurricane, was a hybrid—a mahogany-pillared, two-storeyed central block on the old stone foundations flanked by two single-storeyed wings with widely overhung, flat-pitched Jamaican roofs of silver cedar shingles. The Havelocks were now sitting on the deep veranda of the central block facing the gently sloping garden beyond which a vast tumbling jungle vista stretched away twenty miles to the sea.

Colonel Havelock put down his *Gleaner*. 'I thought I heard a car.'

Mrs. Havelock said firmly: 'If it's those ghastly Feddens from Port Antonio, you've simply got to get rid of them. I can't stand any more of their moans about England. And last time they were both quite drunk when they left and dinner was cold.' She got up quickly. 'I'm going to tell Agatha to say I've got a migraine.'

Agatha came out through the drawing-room door. She looked fussed. She was followed closely by three men. She said hurriedly: ‘Gemmun from Kingston’m. To see de Colonel.’

The leading man slid past the housekeeper. He was still wearing his hat, a panama with a short very up-curved brim. He took this off with his left hand and held it against his stomach. The rays of the sun glittered on hair-grease and on a mouthful of smiling white teeth. He went up to Colonel Havelock, his outstretched hand held straight in front of him. ‘Major Gonzales. From Havana. Pleased to meet you, Colonel.’

The accent was the sham American of a Jamaican taxi-driver. Colonel Havelock had got to his feet. He touched the outstretched hand briefly. He looked over the Major’s shoulder at the other two men who had stationed themselves on either side of the door. They were both carrying that new holdall of the tropics—a Pan American overnight bag. The bags looked heavy. Now the two men bent down together and placed them beside their yellowish shoes. They straightened themselves. They wore flat white caps with transparent green visors that cast green shadows down to their cheek-bones. Through the green shadows their intelligent animal eyes fixed themselves on the Major, reading his behaviour.

‘They are my secretaries.’

Colonel Havelock took a pipe out of his pocket and began to fill it. His direct blue eyes took in the sharp clothes, the natty shoes, the glistening finger-nails

of the Major and the blue jeans and calypso shirts of the other two. He wondered how he could get these men into his study and near the revolver in the top drawer of his desk. He said: 'What can I do for you?' As he lit his pipe he watched the Major's eyes and mouth through the smoke.

Major Gonzales spread his hands. The width of his smile remained constant. The liquid, almost golden eyes were amused, friendly. 'It is a matter of business, Colonel. I represent a certain gentleman in Havana'—he made a throw-away gesture with his right hand. 'A powerful gentleman. A very fine guy.' Major Gonzales assumed an expression of sincerity. 'You would like him Colonel. He asked me to present his compliments and to inquire the price of your property.'

Mrs. Havelock, who had been watching the scene with a polite half-smile on her lips, moved to stand beside her husband. She said kindly, so as not to embarrass the poor man: 'What a shame, Major. All this way on these dusty roads! Your friend really should have written first, or asked anyone in Kingston or at Government House. You see, my husband's family have lived here for nearly three hundred years.' She looked at him sweetly, apologetically. 'I'm afraid there just isn't any question of selling Content. There never has been. I wonder where your important friend can possibly have got the idea from.'

Major Gonzales bowed briefly. His smiling face turned back to Colonel Havelock. He said, as if Mrs. Havelock had not opened her mouth: 'My

gentleman is told this is one of the finest estancias in Jamaica. He is a most generous man. You may mention any sum that is reasonable.'

Colonel Havelock said firmly: 'You heard what Mrs Havelock said. The property is not for sale.'

Major Gonzales laughed. It sounded quite genuine laughter. He shook his head as if he was explaining something to a rather dense child. 'You misunderstand me, Colonel. My gentleman desires this property and no other property in Jamaica. He has some funds, some extra funds, to invest. These funds are seeking a home in Jamaica. My gentleman wishes this to be their home.'

Colonel Havelock said patiently: 'I quite understand, Major. And I am so sorry you have wasted your time. Content will never be for sale in my lifetime. And now, if you'll forgive me. My wife and I always dine early, and you have a long way to go.' He made a gesture to the left, along the veranda. 'I think you'll find this is the quickest way to your car. Let me show you.'

Colonel Havelock moved invitingly, but when Major Gonzales stayed where he was, he stopped. The blue eyes began to freeze.

There was perhaps one less tooth in Major Gonzales's smile and his eyes had become watchful. But his manner was still jolly. He said cheerfully, 'Just one moment, Colonel.' He issued a curt order over his shoulder. Both the Havelocks noticed the jolly mask slip with the few sharp words through the

teeth. For the first time Mrs. Havelock looked slightly uncertain. She moved still closer to her husband. The two men picked up their blue Pan American bags and stepped forward. Major Gonzales reached for the zipper on each of them in turn and pulled. The taut mouths sprang open. The bags were full to the brim with neat solid wads of American money. Major Gonzales spread his arms. ‘All hundred-dollar bills. All genuine. Half a million dollars. That is, in your money, let us say, one hundred and eighty thousand pounds. A small fortune. There are many other good places to live in the world, Colonel. And perhaps my gentleman would add a further twenty thousand pounds to make the round sum. You would know in a week. All I need is half a sheet of paper with your signature. The lawyers can do the rest. Now Colonel,’ the smile was winning, ‘shall we say yes and shake hands on it? Then the bags stay here and we leave you to your dinner.’

The Havelocks now looked at the Major with the same expression—a mixture of anger and disgust. One could imagine Mrs. Havelock telling the story next day. ‘Such a common, greasy little man. And those filthy plastic bags full of money! Timmy was wonderful. He just told him to get out and take the dirty stuff away with him.’

Colonel Havelock’s mouth turned down with distaste. He said: ‘I thought I had made myself clear, Major. The property is not for sale at any price. And I do not share the popular thirst for American dollars. I must now ask you to leave.’ Colonel Havelock laid his cold pipe on the table as if he was preparing to roll up his sleeves.

For the first time Major Gonzales's smile lost its warmth. The mouth continued to grin but it was now shaped in an angry grimace. The liquid golden eyes were suddenly brassy and hard. He said softly: 'Colonel. It is I who have not made myself clear. Not you. My gentleman has instructed me to say that if you will not accept his most generous terms we must proceed to other measures.'

Mrs. Havelock was suddenly afraid. She put her hand on Colonel Havelock's arm and pressed it hard. He put his hand over hers in reassurance. He said through tight lips: 'Please leave us alone and go, Major. Otherwise I shall communicate with the police.'

The pink tip of Major Gonzales's tongue came out and slowly licked along his lips. All the light had gone out of his face and it had become taut and hard. He said harshly. 'So the property is not for sale in your lifetime, Colonel. Is that your last word?' His right hand went behind his back and he clicked his fingers softly, once. Behind him the gun-hands of the two men slid through the opening of their gay shirts above the waistbands. The sharp animal eyes watched the Major's fingers behind his back.

Mrs. Havelock's hand went up to her mouth. Colonel Havelock tried to say yes, but his mouth was dry. He swallowed noisily. He could not believe it. This mangy Cuban crook must be bluffing. He managed to say thickly: 'Yes, it is.'

Major Gonzales nodded curtly. ‘In that case, Colonel, my gentleman will carry on the negotiations with the next owner—with your daughter.’

The fingers clicked. Major Gonzales stepped to one side to give a clear field of fire. The brown monkey-hands came out from under the gay shirts. The ugly sausage-shaped hunks of metal spat and thudded—again and again, even when the two bodies were on their way to the ground.

Major Gonzales bent down and verified where the bullets had hit. Then the three small men walked quickly back through the rose and white drawing-room and across the dark carved mahogany hall and out through the elegant front door. They climbed unhurriedly into a black Ford Consul Sedan with Jamaican number plates and, with Major Gonzales driving and the two gunmen sitting upright in the back seat, they drove off at an easy pace down the long avenue of Royal Palms. At the junction of the drive and the road to Port Antonio the cut telephone wires hung down through the trees like bright lianas. Major Gonzales slalomed the car carefully and expertly down the rough parochial road until he was on the metalled strip near the coast. Then he put on speed. Twenty minutes after the killing he came to the outer sprawl of the little banana port. There he ran the stolen car on to the grass verge beside the road and the three men got out and walked the quarter of a mile through the sparsely lit main street to the banana wharves. The speed-boat was waiting, its exhaust bubbling. The three men got in and the boat zoomed off across the still waters of what an American poetess has called the most beautiful harbour in the world. The anchor chain was already half up on the glittering fifty-ton Chriscraft. She was flying the Stars and Stripes. The two graceful antennae of

the deep-sea rods explained that these were tourists—from Kingston, perhaps, or from Montego Bay. The three men went on board and the speed-boat was swung in. Two canoes were circling, begging. Major Gonzales tossed a fifty-cent piece to each of them and the stripped men dived. The twin diesels awoke to a stuttering roar and the Chriscraft settled her stern down a fraction and made for the deep channel below the Titchfield hotel. By dawn she would be back in Havana. The fisherman and wharfingers ashore watched her go, and went on with their argument as to which of the film-stars holidaying in Jamaica this could have been.

Up on the broad veranda of Content the last rays of the sun glittered on the red stains. One of the doctor birds whirred over the balustrade and hovered close above Mrs. Havelock's heart, looking down. No, this was not for him. He flirted gaily off to his roosting-perch among the closing hibiscus.

There came the sound of someone in a small sports car making a racing change at the bend of the drive. If Mrs. Havelock had been alive she would have been getting ready to say: 'Judy, I'm always telling you not to do that on the corner. It scatters gravel all over the lawn and you know how it ruins Joshua's lawnmower.'

It was a month later. In London, October had begun with a week of brilliant Indian summer, and the noise of the mowers came up from Regent's Park and in through the wide open windows of M's office. They were motor-mowers

and James Bond reflected that one of the most beautiful noises of summer, the drowsy iron song of the old machines, was going for ever from the world. Perhaps today children felt the same about the puff and chatter of the little two-stroke engines. At least the cut grass would smell the same.

Bond had time for these reflections because M seemed to be having difficulty in coming to the point. Bond had been asked if he had anything on at the moment, and he had replied happily that he hadn't and had waited for Pandora's box to be opened for him. He was mildly intrigued because M had addressed him as James and not by his number—007. This was unusual during duty hours. It sounded as if there might be some personal angle to this assignment—as if it might be put to him more as a request than as an order. And it seemed to Bond that there was an extra small cleft of worry between the frosty, damnably clear, grey eyes. And three minutes was certainly too long to spend getting a pipe going.

M swivelled his chair round square with the desk and flung the box of matches down so that it skidded across the red leather top towards Bond. Bond fielded it and skidded it politely back to the middle of the desk. M smiled briefly. He seemed to make up his mind. He said mildly: 'James, has it ever occurred to you that every man in the fleet knows what to do except the commanding admiral?'

Bond frowned. He said: 'It hadn't occurred to me, sir. But I see what you mean. The rest only have to carry out orders. The admiral has to decide on the

orders. I suppose it's the same as saying that Supreme Command is the loneliest post there is.'

M jerked his pipe sideways. 'Same sort of idea. Someone's got to be tough. Someone's got to decide in the end. If you send a hawing signal to the Admiralty you deserve to be put on the beach. Some people are religious—pass the decision on to God.' M's eyes were defensive. 'I used to try that sometimes in the Service, but He always passed the buck back again—told me to get on and make up my own mind. Good for one, I suppose, but tough. Trouble is, very few people keep tough after about forty. They've been knocked about by life—had troubles, tragedies, illnesses. These things soften you up.' M looked sharply at Bond. 'How's your coefficient of toughness, James? You haven't got to the dangerous age yet.'

Bond didn't like personal questions. He didn't know what to answer, nor what the truth was. He had not got a wife or children—had never suffered the tragedy of a personal loss. He had not had to stand up to blindness or a mortal disease. He had absolutely no idea how he would face these things that needed so much more toughness than he had ever had to show. He said hesitantly: 'I suppose I can stand most things if I have to and if I think it's right, sir. I mean'—he did not like using such words—'if the cause is—er—sort of just, sir.' He went on, feeling ashamed at himself for throwing the ball back at M: 'Of course it's not easy to know what is just and what isn't. I suppose I assume that when I'm given an unpleasant job in the Service the cause is a just one.'

‘Dammit,’ M’s eyes glittered impatiently. ‘That’s just what I mean! You rely on *me*. You won’t take any damned responsibility yourself.’ He thrust the stem of his pipe towards his chest. ‘I’m the one who has to do that. I’m the one who has to decide if a thing is right or not.’ The anger died out of the eyes. The grim mouth bent sourly. He said gloomily: ‘Oh well, I suppose it’s what I’m paid for. Somebody’s got to drive the bloody train.’ M put his pipe back in his mouth and drew on it deeply to relieve his feelings.

Now Bond felt sorry for M. He had never before heard M use as strong a word as ‘bloody’. Nor had M ever given a member of his staff any hint that he felt the weight of the burden he was carrying and had carried ever since he had thrown up the certain prospect of becoming Fifth Sea Lord in order to take over the Secret Service. M had got himself a problem. Bond wondered what it was. It would not be concerned with danger. If M could get the odds more or less right he would risk anything, anywhere in the world. It would not be political. M did not give a damn for the susceptibilities of any Ministry and thought nothing of going behind their backs to get a personal ruling from the Prime Minister. It might be moral. It might be personal. Bond said: ‘Is there anything I can help over, sir?’

M looked briefly, thoughtfully at Bond, and then swivelled his chair so that he could look out of the window at the high summery clouds. He said abruptly: ‘Do you remember the Havelock case?’

‘Only what I read in the papers, sir. Elderly couple in Jamaica. The daughter came home one night and found them full of bullets. There was some talk of

gangsters from Havana. The housekeeper said three men had called in a car. She thought they might have been Cubans. It turned out the car had been stolen. A yacht had sailed from the local harbour that night. But as far as I remember the police didn't get anywhere. That's all, sir. I haven't seen any signals passing on the case.'

M said gruffly: 'You wouldn't have. They've been personal to me. We weren't asked to handle the case. Just happens,' M cleared his throat: this private use of the Service was on his conscience, 'I knew the Havelocks. Matter of fact I was best man at their wedding. Malta. Nineteen twenty-five.'

'I see, sir. That's bad.'

M said shortly: 'Nice people. Anyway, I told Station C to look into it. They didn't get anywhere with the Batista people, but we've got a good man with the other side—with this chap Castro. And Castro's Intelligence people seem to have the Government pretty well penetrated. I got the whole story a couple of weeks ago. It boils down to the fact that a man called Hammerstein, or von Hammerstein, had the couple killed. There are a lot of Germans well dug in in these banana republics. They're Nazis who got out of the net at the end of the War. This one's ex-Gestapo. He got a job as head of Batista's Counter Intelligence. Made a packet of money out of extortion and blackmail and protection. He was set up for life until Castro's lot began to make headway. He was one of the first to start easing himself out. He cut one of his officers in on his loot, a man called Gonzales, and this man travelled around the Caribbean with a couple of gunmen to protect him and began salting away

Hammerstein's money outside Cuba—put it in real estate and suchlike under nominees. Only bought the best, but at top prices. Hammerstein could afford them. When money didn't work he'd use force—kidnap a child, burn down a few acres, anything to make the owner see reason. Well, this man Hammerstein heard of the Havelocks' property, one of the best in Jamaica, and he told Gonzales to go and get it. I suppose his orders were to kill the Havelocks if they wouldn't sell and then put pressure on the daughter. There's a daughter, by the way. Should be about twenty-five by now. Never seen her myself. Anyway, that's what happened. They killed the Havelocks. Then two weeks ago Batista sacked Hammerstein. May have got to hear about one of these jobs. I don't know. But, anyway, Hammerstein cleared out and took his little team of three with him. Timed things pretty well, I should say. It looks as if Castro may get in this winter if he keeps the pressure up.'

Bond said softly: 'Where have they gone to?'

'America. Right up in the North of Vermont. Up against the Canadian border. Those sort of men like being close to frontiers. Place called Echo Lake. It's some kind of a millionaire's ranch he's rented. Looks pretty from the photographs. Tucked away in the mountains with this little lake in the grounds. He's certainly chosen himself somewhere where he won't be troubled with visitors.'

'How did you get on to this, sir?'

‘I sent a report of the whole case to Edgar Hoover. He knew of the man. I guessed he would. He’s had a lot of trouble with this gun-running from Miami to Castro. And he’s been interested in Havana ever since the big American gangster money started following the casinos there. He said that Hammerstein and his party had come into the States on six months visitors’ visas. He was very helpful. Wanted to know if I’d got enough to build up a case on. Did I want these men extradited for trial in Jamaica? I talked it over here with the Attorney General and he said there wasn’t a hope unless we could get the witnesses from Havana. There’s no chance of that. It was only through Castro’s Intelligence that we even know as much as we do. Officially the Cubans won’t raise a finger. Next Hoover offered to have their visas revoked and get them on the move again. I thanked him and said no, and we left it at that.’

M sat for a moment in silence. His pipe had died and he relit it. He went on: ‘I decided to have a talk with our friends the Mounties. I got on to the Commissioner on the scrambler. He’s never let me down yet. He strayed one of his frontier patrol planes over the border and took a full aerial survey of this Echo Lake place. Said that if I wanted any other co-operation he’d provide it. And now,’ M slowly swiveled his chair back square with the desk, ‘I’ve got to decide what to do next.’

Now Bond realized why M was troubled, why he wanted someone else to make the decision. Because these had been friends of M. Because a personal element was involved, M had worked on the case by himself. And now it had come to the point when justice ought to be done and these people brought to

book. But M was thinking: is this justice, or is it revenge? No judge would take a murder case in which he had personally known the murdered person. M wanted someone else, Bond, to deliver judgment. There were no doubts in Bond's mind. He didn't know the Havelocks or care who they were. Hammerstein had operated the law of the jungle on two defenceless old people. Since no other law was available, the law of the jungle should be visited upon Hammerstein. In no other way could justice be done. If it was revenge, it was the revenge of the community.

Bond said: 'I wouldn't hesitate for a minute, sir. If foreign gangsters find they can get away with this kind of thing they'll decide the English are as soft as some other people seem to think we are. This is a case for rough justice—an eye for an eye.'

M went on looking at Bond. He gave no encouragement, made no comment.

Bond said: 'These people can't be hung, sir. But they ought to be killed.'

M's eyes ceased to focus on Bond. For a moment they were blank, looking inward. Then he slowly reached for the top drawer of his desk on the left-hand side, pulled it open and extracted a thin file without the usual title across it and without the top secret red star. He placed the file squarely in front of him and his hand rummaged again in the open drawer. The hand brought out a rubber stamp and a red-ink pad. M opened the pad, tamped the rubber stamp on it and then carefully, so that it was properly aligned with the top right-hand corner of the docket, pressed it down on the grey cover.

M replaced the stamp and the ink pad in the drawer and closed the drawer. He turned the docket round and pushed it gently across the desk to Bond.

The red sans serif letters, still damp, said: FOR YOUR EYES ONLY.

Bond said nothing. He nodded and picked up the docket and walked out of the room.

Two days later, Bond took the Friday B.O.A.C. *Comet* to Montreal. He did not care for it. It flew too high and too fast and there were too many passengers. He regretted the days of the old *Stratocruiser*—that fine lumbering old plane that took ten hours to cross the Atlantic. Then one had been able to have dinner in peace, sleep for seven hours in a comfortable bunk, and get up in time to wander down to the lower deck and have that ridiculous B.O.A.C. ‘country house’ breakfast while the dawn came up and flooded the cabin with the first bright gold of the Western hemisphere. Now it was all too quick. The stewards had to serve everything almost at the double, and then one had a bare two hours snooze before the hundred-mile-long descent from forty thousand feet. Only eight hours after leaving London, Bond was driving a Hertz U-drive Plymouth saloon along the broad Route 17 from Montreal to Ottawa and trying to remember to keep on the right of the road.

The Headquarters of the Royal Canadian Mounted Police are in the Department of Justice alongside Parliament Buildings in Ottawa. Like most Canadian public buildings, the Department of Justice is a massive block of grey masonry built to look stodgily important and to withstand long and hard winters. Bond had been told to ask at the front desk for the Commissioner and to give his name as ‘Mr James’. He did so, and a young fresh-faced R.C.M.P. corporal, who looked as if he did not like being kept indoors on a warm sunny day, took him up in the lift to the third floor and handed him over to a sergeant in a large tidy office which contained two girl secretaries and a lot of heavy furniture. The sergeant spoke on an intercom and there was a ten minutes delay during which Bond smoked and read a recruiting pamphlet which made the Mounties sound like a mixture between a dude ranch, Dick Tracy and *Rose Marie*. When he was shown in through the connecting door a tall youngish man in a dark blue suit, white shirt and black tie turned away from the window and came towards him. ‘Mr. James?’ the man smiled thinly. ‘I’m Colonel, let’s say—er—Johns.’

They shook hands. ‘Come along and sit down. The Commissioner’s very sorry not to be here to welcome you himself. He has a bad cold—you know, one of those diplomatic ones.’ Colonel ‘Johns’ looked amused. ‘Thought it might be best to take the day off. I’m just one of the help. I’ve been on one or two hunting-trips myself and the Commissioner fixed on me to handle this little holiday of yours,’ the Colonel paused, ‘on me only. Right?’

Bond smiled. The Commissioner was glad to help but he was going to handle this with kid gloves. There would be no come-back on his office. Bond

thought he must be a careful and very sensible man. He said: ‘I quite understand. My friends in London didn’t want the Commissioner to bother himself personally with any of this. And I haven’t seen the Commissioner or been anywhere near his headquarters. That being so, can we talk English for ten minutes or so—just between the two of us?’

Colonel Johns laughed. ‘Sure. I was told to make that little speech and then get down to business. You understand, Commander, that you and I are about to connive at various felonies, starting with obtaining a Canadian hunting-licence under false pretences and being an accessory to a breach of the frontier laws, and going on down from there to more serious things. It wouldn’t do anyone one bit of good to have any ricochets from this little lot. Get me?’

‘That’s how my friends feel too. When I go out of here, we’ll forget each other, and if I end up in Sing-Sing that’s my worry. Well, now?’

Colonel Johns opened a drawer in the desk and took out a bulging file and opened it. The top document was a list. He put his pencil on the first item and looked across at Bond. He ran his eye over Bond’s old black and white hound’s-tooth tweed suit and white shirt and thin black tie. He said: ‘Clothes.’ He unclipped a plain sheet of paper from the file and slid it across the desk. ‘This is a list of what I reckon you’ll need and the address of a big second-hand clothing store here in the city. Nothing fancy, nothing conspicuous—khaki shirt, dark brown jeans, good climbing-boots or shoes. See they’re comfortable. And there’s the address of a chemist for walnut stain. Buy a gallon and give yourself a bath in the stuff. There are plenty of browns in the

hills at this time and you won't want to be wearing parachute cloth or anything that smells of camouflage. Right? If you're picked up, you're an Englishman on a hunting-trip in Canada who's lost his way and got across the border by mistake. Rifle. Went down myself and put it in the boot of your Plymouth while you were waiting. One of the new Savage 99Fs, Weatherby 6 x 62 'scope, five-shot repeater with twenty rounds of high-velocity .250-3,000. Lightest big-game lever action on the market. Only six and a half pounds. Belongs to a friend. Glad to have it back one day, but he won't miss it if it doesn't turn up. It's been tested and it's okay up to five hundred. Gun license,' Colonel Johns slid it over, 'issued here in the city in your real name as that fits with your passport. Hunting-license ditto, but small game only, vermin, as it isn't quite the deer season yet, also driving-license to replace the provisional one I had waiting for you with the Hertz people. Haversack, compass—used ones, in the boot of your car. Oh, by the way,' Colonel Johns looked up from his list, 'you carrying a personal gun?'

'Yes. Walther PPK in a Burns Martin holster.'

'Right, give me the number. I've got a blank license here. If that gets back to me it's quite okay. I've got a story for it.'

Bond took out his gun and read off the number. Colonel Johns filled in the form and pushed it over.

'Now then, maps. Here's a local Esso map that's all you need to get you to the area.' Colonel Johns got up and walked round with the map to Bond and

spread it out. ‘You take this route 17 back to Montreal, get on to 37 over the bridge at St Anne’s and then over the river again on to 7. Follow 7 on down to Pike River. Get on 52 to Stanbridge. Turn right in Stanbridge for Frelighsburg and leave the car in a garage there. Good roads all the way. Whole trip shouldn’t take you more than five hours including stops. Okay? Now this is where you’ve got to get things right.

Make it that you get to Frelighsburg around three a.m. Garage-hand’ll be half asleep and you’ll be able to get the gear out of the boot and move off without him noticing even if you were a double-headed Chinaman.’ Colonel Johns went back to his chair and took two more pieces of paper off the file. The first was a scrap of penciled map, the other a section of aerial photograph. He said, looking seriously at Bond: ‘Now, here are the only inflammable things you’ll be carrying and I’ve got to rely on you getting rid of them just as soon as they’ve been used, or at once if there’s a chance of you getting into trouble. This,’ he pushed the paper over, ‘is a rough sketch of an old smuggling-route from Prohibition days. It’s not used now or I wouldn’t recommend it.’ Colonel Johns smiled sourly. ‘You might find some rough customers coming over in the opposite direction, and they’re apt to shoot and not even ask questions afterwards—crooks, druggers, white-slavers—but nowadays they mostly travel up by Viscount. This route was used for runners between Franklin, just over the Derby Line, and Frelighsburg. You follow this path through the foothills, and you detour Franklin and get into the start of the Green Mountains. There it’s all Vermont spruce and pine with a bit of maple, and you can stay inside that stuff for months and not see a soul. You get across country here, over a couple of highways, and you leave Enosburg Falls to the

West. Then you're over a steep range and down into the top of the valley you want. The cross is Echo Lake and, judging from the photographs, I'd be inclined to come down on top of it from the east. Got it?'

'What's the distance? About ten miles?'

'Ten and a half. Take you about three hours from Frelighsburg if you don't lose your way, so you'll be in sight of the place around six and have about an hour's light to help you over the last stretch.' Colonel Johns pushed over the square of aerial photograph. It was a central cut from the one Bond had seen in London. It showed a long low range of well-kept buildings made of cut stone. The roofs were of slate, and there was a glimpse of graceful bow windows and a covered patio. A dust road ran past the front door and on this side were garages and what appeared to be kennels. On the garden side was a stone flagged terrace with a flowered border, and beyond this two or three acres of trim lawn stretched down to the edge of the small lake. The lake appeared to have been artificially created with a deep stone dam. There was a group of wrought-iron garden furniture where the dam wall left the bank and, half-way along the wall, a diving-board and a ladder to climb out of the lake. Beyond the lake the forest rose steeply up. It was from this side that Colonel Johns suggested an approach. There were no people in the photograph, but on the stone flags in front of the patio was a quantity of expensive-looking aluminum garden furniture and a central glass table with drinks. Bond remembered that the larger photograph had shown a tennis court in the garden and on the other side of the road the trim white fences and grazing horses of a stud farm. Echo Lake looked what it was—the luxurious retreat, in deep

country, well away from atom bomb targets, of a millionaire who liked privacy and could probably offset a lot of his running expenses against the stud farm and an occasional good let. It would be an admirable refuge for a man who had had ten steamy years of Caribbean politics and who needed a rest to recharge his batteries. The lake was also convenient for washing blood off hands.

Colonel Johns closed his now empty file and tore the typewritten list into small fragments and dropped them in the wastepaper basket. The two men got to their feet. Colonel Johns took Bond to the door and held out his hand. He said: 'Well, I guess that's all. I'd give a lot to come with you. Talking about all this has reminded me of one or two sniping jobs at the end of the War. I was in the Army then. We were under Monty in Eighth Corps. On the left of the line in the Ardennes. It was much the same sort of country as you'll be using, only different trees. But you know how it is in these police jobs. Plenty of paper-work and keep your nose clean for the pension. Well, so long and the best of luck. No doubt I'll read all about it in the papers,' he smiled, 'whichever way it goes.'

Bond thanked him and shook him by the hand. A last question occurred to him. He said: 'By the way, is the Savage single pull or double? I won't have a chance of finding out and there may not be much time for experimenting when the target shows.'

'Single pull and it's a hair-trigger. Keep your finger off until you're sure you've got him. And keep outside three hundred if you can. I guess these men

are pretty good themselves. Don't get too close.' He reached for the door-handle. His other hand went to Bond's shoulder. 'Our Commissioner's got a motto: "Never send a man where you can send a bullet." You might remember that. So long, Commander.'

Bond spent the night and most of the next day at the KO-ZEE Motor Court outside Montreal. He paid in advance for three nights. He passed the day looking to his equipment and wearing in the soft ripple rubber climbing-boots he had bought in Ottawa. He bought glucose tablets and some smoked ham and bread from which he made himself sandwiches. He also bought a large aluminum flask and filled this with three-quarters Bourbon and a quarter coffee. When darkness came he had dinner and a short sleep and then diluted the walnut stain and washed himself all over with the stuff even to the roots of his hair. He came out looking like a Red Indian with blue-grey eyes. Just before midnight he quietly opened the side door into the automobile bay, got into the Plymouth and drove off on the last lap south to Frelighsburg.

The man at the all-night garage was not as sleepy as Colonel Johns had said he would be.

'Goin' huntin', mister?'

You can get far in North America with laconic grunts. Huh, hun and hi! in their various modulations, together with sure, guess so, that so? And nuts! will meet almost any contingency.

Bond, slinging the strap of his rifle over his shoulder, said ‘Hun.’

‘Man got a fine beaver over by Highgate Springs Saturday.’

Bond said indifferently ‘That so?’, paid for two nights and walked out of the garage. He had stopped on the far side of the town, and now he only had to follow the highway for a hundred yards before he found the dirt track running off into the woods on his right. After half an hour the track petered out at a broken-down farmhouse. A chained dog set up a frenzied barking, but no light showed in the farmhouse and Bond skirted it and at once found the path by the stream. He was to follow this for three miles. He lengthened his stride to get away from the dog. When the barking stopped there was silence, the deep velvet silence of woods on a still night. It was a warm night with a full yellow moon that threw enough light down through the thick spruce for Bond to follow the path without difficulty. The springy, cushioned soles of the climbing-boots were wonderful to walk on, and Bond got his second wind and knew he was making good time. At around four o’clock the trees began to thin and he was soon walking through open fields with the scattered lights of Franklin on his right. He crossed a secondary, tarred road, and now there was a wider track through more woods and on his right the pale glitter of a lake. By five o’clock he had crossed the black rivers of U.S. highways 108 and 120. On the latter was a sign saying ENOSBURG FALLS 1 MI. Now he was on

the last lap—a small hunting-trail that climbed steeply. Well away from the highway, he stopped and shifted his rifle and knapsack round, had a cigarette and burned the sketch-map. Already there was a faint paling in the sky and small noises in the forest—the harsh, melancholy cry of a bird he did not know and the rustlings of small animals. Bond visualized the house deep down in the little valley on the other side of the mountain ahead of him. He saw the blank curtained windows, the crumpled sleeping faces of the four men, the dew on the lawn and the widening rings of the early rise on the gunmetal surface of the lake. And here, on the other side of the mountain, was the executioner coming up through the trees. Bond closed his mind to the picture, trod the remains of his cigarette into the ground and got going.

Was this a hill or a mountain? At what height does a hill become a mountain? Why don't they manufacture something out of the silver bark of birch trees? It looks so useful and valuable. The best things in America are chipmunks, and oyster stew. In the evening darkness doesn't really fall, it rises. When you sit on top of a mountain and watch the sun go down behind the mountain opposite, the darkness rises up to you out of the valley. Will the birds one day lose their fear of man? It must be centuries since man has killed a small bird for food in these woods, yet they are still afraid. Who was this Ethan Allen who commanded the Green Mountain Boys of Vermont? Now, in American motels, they advertise Ethan Allen furniture as an attraction. Why? Did he make furniture? Army boots should have rubber soles like these.

With these and other random thoughts Bond steadily climbed upwards and obstinately pushed away from him the thought of the four faces asleep on the white pillows.

The round peak was below the tree-line and Bond could see nothing of the valley below. He rested and then chose an oak tree, and climbed up and out along a thick bough. Now he could see everything—the endless vista of the Green Mountains stretching in every direction as far as he could see, away to the east the golden ball of the sun just coming up in glory, and below, two thousand feet down a long easy slope of tree-tops broken once by a wide band of meadow, through a thin veil of mist, the lake, the lawns and the house.

Bond lay along the branch and watched the band of pale early morning sunshine creeping down into the valley. It took a quarter of an hour to reach the lake, and then seemed to flood at once over the glittering lawn and over the wet slate tiles of the roofs. Then the mist went quickly from the lake and the target area, washed and bright and new, lay waiting like an empty stage.

Bond slipped the telescopic sight out of his pocket and went over the scene inch by inch. Then he examined the sloping ground below him and estimated ranges. From the edge of the meadow, which would be his only open field of fire unless he went down through the last belt of trees to the edge of the lake, it would be about five hundred yards to the terrace and the patio, and about three hundred to the diving-board and the edge of the lake. What did these people do with their time? What was their routine? Did they ever bathe? It was still warm enough. Well, there was all day. If by the end of it they had not

come down to the lake, he would just have to take his chance at the patio and five hundred yards. But it would not be a good chance with a strange rifle. Ought he to get on down straight away to the edge of the meadow? It was a wide meadow, perhaps five hundred yards of going without cover. It would be as well to get that behind him before the house awoke. What time did these people get up in the morning?

As if to answer him, a white blind rolled up in one of the smaller windows to the left of the main block. Bond could distinctly hear the final snap of the spring roller. Echo Lake! Of course. Did the echo work both ways? Would he have to be careful of breaking branches and twigs? Probably not. The sounds in the valley would bounce upwards off the surface of the water. But there must be no chances taken.

A thin column of smoke began to trickle up straight into the air from one of the left-hand chimneys. Bond thought of the bacon and eggs that would soon be frying. And the hot coffee. He eased himself back along the branch and down to the ground. He would have something to eat, smoke his last safe cigarette and get on down to the firing-point.

The bread stuck in Bond's throat. Tension was building up in him. In his imagination he could already hear the deep bark of the Savage. He could see the black bullet lazily, like a slow flying bee, homing down into the valley towards a square of pink skin. There was a light smack as it hit. The skin dented, broke and then closed up again leaving a small hole with bruised edges. The bullet ploughed on, unhurriedly, towards the pulsing heart—the

tissues, the blood-vessels, parting obediently to let it through. Who was this man he was going to do this to? What had he ever done to Bond? Bond looked thoughtfully down at his trigger-finger. He crooked it slowly, feeling in his imagination the cool curve of metal. Almost automatically, his left hand reached out for the flask. He held it to his lips and tilted his head back. The coffee and whisky burned a small fire down his throat. He put the top back on the flask and waited for the warmth of the whisky to reach his stomach. Then he got slowly to his feet, stretched and yawned deeply and picked up the rifle and slung it over his shoulder. He looked round carefully to mark the place when he came back up the hill and started slowly off down through the trees.

Now there was no trail and he had to pick his way slowly, watching the ground for dead branches. The trees were more mixed. Among the spruce and silver birch there was an occasional oak and beech and sycamore and, here and there, the blazing Bengal fire of a maple in autumn dress. Under the trees was a sparse undergrowth of their saplings and much dead wood from old hurricanes. Bond went carefully down, his feet making little sound among the leaves and moss-covered rocks, but soon the forest was aware of him and began to pass on the news. A large doe, with two Bambi-like young, saw him first and galloped off with an appalling clatter. A brilliant woodpecker with a scarlet head flew down ahead of him, screeching each time Bond caught up with it, and always there were the chipmunks, craning up on their hind feet, lifting their small muzzles from their teeth as they tried to catch his scent, and then scampering off to their rock holes with chatterings that seemed to fill the woods with fright. Bond willed them to have no fear, that the gun he carried was not meant for them, but with each alarm he wondered if, when he got to

the edge of the meadow, he would see down on the lawn a man with glasses who had been watching the frightened birds fleeing the tree-tops.

But when he stopped behind a last broad oak and looked down across the long meadow to the final belt of trees and the lake and the house, nothing had changed. All the other blinds were still down and the only movement was the thin plume of smoke.

It was eight o'clock. Bond gazed down across the meadow to the trees, looking for one which would suit his purpose. He found it—a big maple, blazing with russet and crimson. This would be right for his clothes, its trunk was thick enough and it stood slightly back from the wall of spruce. From there, standing, he would be able to see all he needed of the lake and the house. Bond stood for a while, plotting his route down through the thick grass and golden-rod of the meadow. He would have to do it on his stomach, and slowly. A small breeze got up and combed the meadow. If only it would keep blowing and cover his passage!

Somewhere not far off, up to the left on the edge of the trees, a branch snapped. It snapped once decisively and there was no further noise. Bond dropped to one knee, his ears pricked and his senses questing. He stayed like that for a full ten minutes, a motionless brown shadow against the wide trunk of the oak.

Animals and birds do not break twigs. Dead wood must carry a special danger signal for them. Birds never alight on twigs that will break under them, and even a large animal like a deer with antlers and four hooves to manipulate

moves quite silently in a forest unless he is in flight. Had these people after all got guards out? Gently Bond eased the rifle off his shoulder and put his thumb on the safe. Perhaps, if the people were still sleeping, a single shot, from high up in the woods, would pass for a hunter or a poacher. But then, between him and approximately where the twig had snapped, two deer broke cover and cantered unhurriedly across the meadow to the left. It was true that they stopped twice to look back, but each time they cropped a few mouthfuls of grass before moving on and into the distant fringe of the lower woods. They showed no fright and no haste. It was certainly they who had been the cause of the snapped branch. Bond breathed a sigh. So much for that. And now to get on across the meadow.

A five-hundred-yard crawl through tall concealing grass is a long and wearisome business. It is hard on knees and hands and elbows, there is a vista of nothing but grass and flower-stalks, and the dust and small insects get into your eyes and nose and down your neck. Bond focused on placing his hands right and maintaining a slow, even speed. The breeze had kept up and his wake through the grass would certainly not be noticeable from the house.

From above, it looked as if a big ground animal—a beaver perhaps, or a woodchuck—was on its way down the meadow. No, it would not be a beaver. They always move in pairs. And yet perhaps it might be a beaver—for now, from higher up on the meadow, something, somebody else had entered the tall grass, and behind and above Bond a second wake was being cut in the deep sea of grass. It looked as if whatever it was would slowly catch up on Bond and that the two wakes would converge just at the next tree-line.

Bond crawled and slithered steadily on, stopping only to wipe the sweat and dust off his face and, from time to time, to make sure that he was on-course for the maple. But when he was close enough for the tree-line to hide him from the house, perhaps twenty feet from the maple, he stopped and lay for a while, massaging his knees and loosening his wrists for the last lap.

He had heard nothing to warn him, and when the soft threatening whisper came from only feet away in the thick grass on his left, his head swiveled so sharply that the vertebrae of his neck made a cracking sound.

‘Move an inch and I’ll kill you.’ It had been a girl’s voice, but a voice that fiercely meant what it said.

Bond, his heart thumping, stared up the shaft of the steel arrow whose blue-tempered triangular tip parted the grass stalks perhaps eighteen inches from his head.

The bow was held sideways, flat in the grass. The knuckles of the brown fingers that held the binding of the bow below the arrow-tip were white. Then there was the length of glinting steel and, behind the metal feathers, partly obscured by waving strands of grass, were grimly clamped lips below two fierce grey eyes against a background of sunburned skin damp with sweat. That was all Bond could make out through the grass. Who the hell was this? One of the guards? Bond gathered saliva back into his dry mouth and began

slowly to edge his right hand, his out-of-sight hand, round and up towards his waistband and his gun. He said softly: 'Who the hell are you?'

The arrow-tip gestured threateningly. 'Stop that right hand or I'll put this through your shoulder. Are you one of the guards?'

'No. Are you?'

'Don't be a fool. What are you doing here?' The tension in the voice had slackened, but it was still hard, suspicious. There was a trace of accent—what was it, Scots? Welsh?

It was time to get to level terms. There was something particularly deadly about the blue arrow-tip. Bond said easily: 'Put away your bow and arrow, Robina. Then I'll tell you.'

'You swear not to go for your gun?'

'All right. But for God's sake let's get out of the middle of this field.' Without waiting, Bond rose on hands and knees and started to crawl again. Now he must get the initiative and hold it. Whoever this damned girl was, she would have to be disposed of quickly and discreetly before the shooting-match began. God, as if there wasn't enough to think of already!

Bond reached the trunk of the tree. He got carefully to his feet and took a quick look through the blazing leaves. Most of the blinds had gone up. Two

slow-moving coloured maids were laying a large breakfast table on the patio. He had been right. The field of vision over the tops of the trees that now fell sharply to the lake was perfect. Bond unslung his rifle and knapsack and sat down with his back against the trunk of the tree. The girl came out of the edge of the grass and stood up under the maple. She kept her distance. The arrow was still held in the bow but the bow was unpulled. They looked warily at each other.

The girl looked like a beautiful unkempt dryad in ragged shirt and trousers. The shirt and trousers were olive green, crumpled and splashed with mud and stains and torn in places, and she had bound her pale blonde hair with golden-rod to conceal its brightness for her crawl through the meadow. The beauty of her face was wild and rather animal, with a wide sensuous mouth, high cheekbones and silvery grey, disdainful eyes. There was the blood of scratches on her forearms and down one cheek, and a bruise had puffed and slightly blackened the same cheek-bone. The metal feathers of a quiver full of arrows showed above her left shoulder. Apart from the bow, she carried nothing but a hunting-knife at her belt and, at her other hip, a small brown canvas bag that presumably carried her food. She looked like a beautiful, dangerous customer who knew wild country and forests and was not afraid of them. She would walk alone through life and have little use for civilization.

Bond thought she was wonderful. He smiled at her. He said softly, reassuringly: 'I suppose you're Robina Hood. My name's James Bond.' He reached for his flask and unscrewed the top and held it out. 'Sit down and have

a drink of this—firewater and coffee. And I've got some biltong. Or do you live on dew and berries?'

She came a little closer and sat down a yard from him. She sat like a Red Indian, her knees splayed wide and her ankles tucked up high under her thighs. She reached for the flask and drank deeply with her head thrown back. She handed it back without comment. She did not smile. She said 'Thanks' grudgingly, and took her arrow and thrust it over her back to join the others in the quiver. She said, watching him closely: 'I suppose you're a poacher. The deer-hunting season doesn't open for another three weeks. But you won't find any deer down here. They only come so low at night. You ought to be higher up during the day, much higher. If you like, I'll tell you where there are some. Quite a big herd. It's a bit late in the day, but you could still get to them. They're up-wind from here and you seem to know about stalking. You don't make much noise.'

'Is that what you're doing here—hunting? Let's see your licence.'

Her shirt had buttoned-down breast pockets. Without protest she took out from one of them the white paper and handed it over.

The license had been issued in Bennington, Vermont. It had been issued in the name of Judy Havelock. There was a list of types of permit. 'Non-resident hunting' and 'Non-resident bow and arrow' had been ticked. The cost had been \$18.50, payable to the Fish and Game Service, Montpelier, Vermont.

Judy Havelock had given her age as twenty-five and her place of birth as Jamaica.

Bond thought: 'God Almighty!' He handed the paper back. So that was the score! He said with sympathy and respect: 'You're quite a girl, Judy. It's a long walk from Jamaica. And you were going to take him on with your bow and arrow. You know what they say in China: "Before you set out on revenge, dig two graves." Have you done that, or did you expect to get away with it?'

The girl was staring at him. 'Who are you? What are you doing here? What do you know about it?'

Bond reflected. There was only one way out of this mess and that was to join forces with the girl. What a hell of a business! He said resignedly: 'I've told you my name. I've been sent out from London by, er, Scotland Yard, I know all about your troubles and I've come out here to pay off some of the score and see you're not bothered by these people. In London we think that the man in that house might start putting pressure on you, about your property, and there's no other way of stopping him.'

The girl said bitterly: 'I had a favourite pony, a Palomino. Three weeks ago they poisoned it. Then they shot my Alsatian. I'd raised it from a puppy. Then came a letter. It said, "Death has many hands. One of these hands is now raised over you." I was to put a notice in the paper, in the personal column, on a particular day. I was just to say, "I will obey. Judy." I went to the police. All they did was to offer me protection. It was people in Cuba, they thought. There

was nothing else they could do about it. So I went to Cuba and stayed in the best hotel and gambled big in the casinos.’ She gave a little smile. ‘I wasn’t dressed like this. I wore my best dresses and the family jewels. And people made up to me. I was nice to them. I had to be. And all the while I asked questions. I pretended I was out for thrills—that I wanted to see the underworld and some real gangsters, and so on. And in the end I found out about this man.’ She gestured down towards the house. ‘He had left Cuba. Batista had found out about him or something. And he had a lot of enemies. I was told plenty about him and in the end I met a man, a sort of high-up policeman, who told me the rest after I had,’ she hesitated and avoided Bond’s eyes, ‘after I had made up to him.’ She paused. She went on: ‘I left and went to America. I had read somewhere about Pinkerton’s, the detective people. I went to them and paid to have them find this man’s address.’ She turned her hands palm upwards on her lap. Now her eyes were defiant. ‘That’s all.’

‘How did you get here?’

‘I flew up to Bennington. Then I walked. Four days. Up through the Green Mountains. I kept out of the way of people. I’m used to this sort of thing. Our house is in the mountains in Jamaica. They’re much more difficult than these. And there are more people, peasants, about in them. Here no one ever seems to walk. They go by car.’

‘And what were you going to do then?’

‘I’m going to shoot von Hammerstein and walk back to Bennington.’ The voice was as casual as if she had said she was going to pick a wild flower.

From down in the valley came the sound of voices. Bond got to his feet and took a quick look through the branches. Three men and two girls had come on to the patio. There was talk and laughter as they pulled out chairs and sat down at the table. One place was left empty at the head of the table between the two girls. Bond took out his telescopic sight and looked through it. The three men were very small and dark. One of them, who smiled all the time and whose clothes looked the cleanest and smartest, would be Gonzales. The other two were low peasant types. They sat together at the foot of the oblong table and took no part in the talk. The girls were swarthy brunettes. They looked like cheap Cuban whores. They wore bright bathing-dresses and a lot of gold jewelry, and laughed and chattered like pretty monkeys. The voices were almost clear enough to understand, but they were talking Spanish.

Bond felt the girl near him. She stood a yard behind him. Bond handed her the glass. He said: ‘The neat little man is called Major Gonzales. The two at the bottom of the table are gunmen. I don’t know who the girls are. Von Hammerstein isn’t there yet.’ She took a quick look through the glass and handed it back without comment. Bond wondered if she realized that she had been looking at the murderers of her father and mother.

The two girls had turned and were looking towards the door into the house. One of them called out something that might have been a greeting. A short, square, almost naked man came out into the sunshine. He walked silently past

the table to the edge of the flagged terrace facing the lawn and proceeded to go through a five-minute programme of physical drill.

Bond examined the man minutely. He was about five feet four with a boxer's shoulders and hips, but a stomach that was going to fat. A mat of black hair covered his breasts and shoulder-blades, and his arms and legs were thick with it. By contrast, there was not a hair on his face or head and his skull was a glittering whitish yellow with a deep dent at the back that might have been a wound or the scar of a trepanning. The bone-structure of the face was that of the conventional Prussian officer—square, hard and thrusting—but the eyes under the naked brows were close-set and piggish, and the large mouth had hideous lips—thick and wet and crimson. He wore nothing but a strip of black material, hardly larger than an athletic support-belt, round his stomach, and a large gold wrist-watch on a gold bracelet. Bond handed the glass to the girl. He was relieved. Von Hammerstein looked just about as unpleasant as M's dossier said he was.

Bond watched the girl's face. The mouth looked grim, almost cruel, as she looked down on the man she had come to kill. What was he to do about her? He could see nothing but a vista of troubles from her presence. She might even interfere with his own plans and insist on playing some silly role with her bow and arrow. Bond made up his mind. He just could not afford to take chances. One short tap at the base of the skull and he would gag her and tie her up until it was all over. Bond reached softly for the butt of his automatic.

Nonchalantly the girl moved a few steps back. Just as nonchalantly she bent down, put the glass on the ground and picked up her bow. She reached behind her for an arrow, and fitted it casually into the bow. Then she looked up at Bond and said quietly: 'Don't get any silly ideas. And keep your distance. I've got what's called wide-angled vision. I haven't come all the way here to be knocked on the head by a flat-footed London bobby. I can't miss with this at fifty yards, and I've killed birds on the wing at a hundred. I don't want to put an arrow through your leg, but I shall if you interfere.'

Bond cursed his previous indecision. He said fiercely: 'Don't be a silly bitch. Put that damned thing down. This is man's work. How in hell do you think you can take on four men with a bow and arrow?'

The girl's eyes blazed obstinately. She moved her right foot back into the shooting-stance. She said through compressed, angry lips: 'You go to hell. And keep out of this. It was my mother and father they killed. Not yours. I've already been here a day and a night. I know what they do and I know how to get Hammerstein. I don't care about the others. They're nothing without him. Now then.' She pulled the bow half taut. The arrow pointed at Bond's feet. 'Either you do what I say or you're going to be sorry. And don't think I don't mean it. This is a private thing I've sworn to do and nobody's going to stop me.' She tossed her head imperiously. 'Well?'

Bond gloomily measured the situation. He looked the ridiculously beautiful wild girl up and down. This was good hard English stock spiced with the hot peppers of a tropical childhood. Dangerous mixture. She had keyed herself up

to a state of controlled hysteria. He was quite certain that she would think nothing of putting him out of action. And he had absolutely no defense. Her weapon was silent, his would alert the whole neighbourhood. Now the only hope would be to work with her. Give her part of the job and he would do the rest. He said quietly: 'Now listen, Judy. If you insist on coming in on this thing we'd better do it together. Then perhaps we can bring it off and stay alive. This sort of thing is my profession. I was ordered to do it—by a close friend of your family, if you want to know. And I've got the right weapon. It's got at least five times the range of yours. I could take a good chance of killing him now, on the patio. But the odds aren't quite good enough. Some of them have got bathing-things on. They'll be coming down to the lake. Then I'm going to do it. You can give supporting fire.' He ended lamely: 'It'll be a great help.'

'No.' She shook her head decisively. 'I'm sorry. You can give what you call supporting fire if you like. I don't care one way or the other. You're right about the swimming. Yesterday they were all down at the lake around eleven. It's just as warm today and they'll be there again. I shall get him from the edge of the trees by the lake. I found a perfect place last night. The bodyguard men bring their guns with them—sort of tommy-gun things. They don't bathe. They sit around and keep guard. I know the moment to get von Hammerstein and I'll be well away from the lake before they take in what's happened. I tell you I've got it all planned. Now then. I can't hang around any more. I ought to have been in my place already. I'm sorry, but unless you say yes straight away there's no alternative.' She raised the bow a few inches.

Bond thought: Damn this girl to hell. He said angrily: 'All right then. But I can tell you that if we get out of this you're going to get such a spanking you won't be able to sit down for a week.' He shrugged. He said with resignation: 'Go ahead. I'll look after the others. If you get away all right, meet me here. If you don't, I'll come down and pick up the pieces.'

The girl unstrung her bow. She said indifferently: 'I'm glad you're seeing sense. These arrows are difficult to pull out. Don't worry about me. But keep out of sight and mind the sun doesn't catch that glass of yours.' She gave Bond the brief, pitying, self-congratulatory smile of the woman who has had the last word, and turned and made off down through the trees.

Bond watched the lithe dark green figure until it had vanished among the tree-trunks, then he impatiently picked up the glass and went back to his vantage-point. To hell with her! It was time to clear the silly bitch out of his mind and concentrate on the job. Was there anything else he could have done—any other way of handling it? Now he was committed to wait for her to fire the first shot. That was bad. But if he fired first there was no knowing what the hot-headed bitch would do. Bond's mind luxuriated briefly in the thought of what he would do to the girl once all this was over. Then there was movement in front of the house, and he put the exciting thoughts aside and lifted his glass.

The breakfast things were being cleared away by the two maids. There was no sign of the girls or the gunmen. Von Hammerstein was lying back among the cushions of an outdoor couch reading a newspaper and occasionally commenting to Major Gonzales, who sat astride an iron garden chair near his

feet. Gonzales was smoking a cigar and from time to time he delicately raised a hand in front of his mouth, leant sideways and spat a bit of leaf out on the ground. Bond could not hear what von Hammerstein was saying, but his comments were in English and Gonzales answered in English. Bond glanced at his watch. It was ten-thirty. Since the scene seemed to be static, Bond sat down with his back to the tree and went over the Savage with minute care. At the same time he thought of what would shortly have to be done with it.

Bond did not like what he was going to do, and all the way from England he had had to keep on reminding himself what sort of men these were. The killing of the Havelocks had been a particularly dreadful killing. Von Hammerstein and his gunmen were particularly dreadful men whom many people around the world would probably be very glad to destroy, as this girl proposed to do, out of private revenge. But for Bond it was different. He had no personal motives against them. This was merely his job—as it was the job of a pest control officer to kill rats. He was the public executioner appointed by M to represent the community. In a way, Bond argued to himself, these men were as much enemies of his country as were the agents of SMERSH or of other enemy Secret Services. They had declared and waged war against British people on British soil and they were currently planning another attack. Bond's mind hunted round for more arguments to bolster his resolve. They had killed the girl's pony and her dog with two casual sideswipes of the hand as if they had been flies. They ...

A burst of automatic fire from the valley brought Bond to his feet. His rifle was up and taking aim as the second burst came. The harsh racket of noise

was followed by laughter and hand-clapping. The kingfisher, a handful of tattered blue and grey feathers, thudded to the lawn and lay fluttering. Von Hammerstein, smoke still dribbling from the snout of his tommy-gun, walked a few steps and put the heel of his naked foot down and pivoted sharply. He took his heel away and wiped it on the grass beside the heap of feathers. The others stood round, laughing and applauding obsequiously. Von Hammerstein's red lips grinned with pleasure. He said something which included the word 'crackshot'. He handed the gun to one of the gunmen and wiped his hands down his fat backsides. He gave a sharp order to the two girls, who ran off into the house, then, with the others following, he turned and ambled down the sloping lawn towards the lake. Now the girls came running back out of the house. Each one carried an empty champagne bottle. Chattering and laughing they skipped down after the men.

Bond got himself ready. He clipped the telescopic sight on to the barrel of the Savage and took his stance against the trunk of the tree. He found a bump in the wood as a rest for his left hand, put his sights at 300, and took broad aim at the group of people by the lake. Then, holding the rifle loosely, he leaned against the trunk and watched the scene.

It was going to be some kind of a shooting contest between the two gunmen. They snapped fresh magazines on to their guns and at Gonzales's orders stationed themselves on the flat stone wall of the dam some twenty feet apart on either side of the diving-board. They stood with their backs to the lake and their guns at the ready.

Von Hammerstein took up his place on the grass verge, a champagne bottle swinging in each hand. The girls stood behind him, their hands over their ears. There was excited jabbering in Spanish, and laughter in which the two gunmen did not join. Through the telescopic sight their faces looked sharp with concentration.

Von Hammerstein barked an order and there was silence. He swung both arms back and counted 'Un ... Dos ... Tres ...' With the 'tres' he hurled the champagne bottles high into the air over the lake.

The two men turned like marionettes, the guns clamped to their hips. As they completed the turn they fired. The thunder of the guns split the peaceful scene and racketed up from the water. Birds fled away from the trees screeching and some small branches cut by the bullets pattered down into the lake. The left-hand bottle disintegrated into dust, the right-hand one, hit by only a single bullet, split in two a fraction of a second later. The fragments of glass made small splashes over the middle of the lake. The gunman on the left had won. The smoke-clouds over the two of them joined and drifted away over the lawn. The echoes boomed softly into silence. The two gunmen walked along the wall to the grass, the rear one looking sullen, the leading one with a sly grin on his face. Von Hammerstein beckoned the two girls forward. They came reluctantly, dragging their feet and pouting. Von Hammerstein said something, asked a question of the winner. The man nodded at the girl on the left. She looked sullenly back at him. Gonzales and Hammerstein laughed. Hammerstein reached out and patted the girl on the rump as if she had been a cow. He said something in which Bond caught the words 'una noche'. The

girl looked up at him and nodded obediently. The group broke up. The prize girl took a quick run and dived into the lake, perhaps to get away from the man who had won her favours, and the other girl followed her. They swam away across the lake calling angrily to each other. Major Gonzales took off his coat and laid it on the grass and sat down on it. He was wearing a shoulder holster which showed the butt of a medium-calibre automatic. He watched von Hammerstein take off his watch and walk along the dam wall to the diving-board. The gunmen stood back from the lake and also watched von Hammerstein and the two girls, who were now out in the middle of the little lake and were making for the far shore. The gunmen stood with their guns cradled in their arms and occasionally one of them would glance round the garden or towards the house. Bond thought there was every reason why von Hammerstein had managed to stay alive so long. He was a man who took trouble to do so.

Von Hammerstein had reached the diving-board. He walked along to the end and stood looking down at the water. Bond tensed himself and put up the safe. His eyes were fierce slits. It would be any minute now. His finger itched on the trigger-guard. What in hell was the girl waiting for?

Von Hammerstein had made up his mind. He flexed his knees slightly. The arms came back. Through the telescopic sight Bond could see the thick hair over his shoulder-blades tremble in a breeze that came to give a quick shiver to the surface of the lake. Now his arms were coming forward and there was a fraction of a second when his feet had left the board and he was still almost

upright. In that fraction of a second there was a flash of silver against his back and then von Hammerstein's body hit the water in a neat dive.

Gonzales was on his feet, looking uncertainly at the turbulence caused by the dive. His mouth was open, waiting. He did not know if he had seen something or not. The two gunmen were more certain. They had their guns at the ready. They crouched, looking from Gonzales to the trees behind the dam, waiting for an order.

Slowly the turbulence subsided and the ripples spread across the lake. The dive had gone deep.

Bond's mouth was dry. He licked his lips, searching the lake with his glass. There was a pink shimmer deep down. It wobbled slowly up. Von Hammerstein's body broke the surface. It lay head down, wallowing softly. A foot or so of steel shaft stuck up from below the left shoulder-blade and the sun winked on the aluminum feathers.

Major Gonzales yelled an order and the two tommy-guns roared and flamed. Bond could hear the crash of the bullets among the trees below him. The Savage shuddered against his shoulder and the right-hand man fell slowly forward on his face. Now the other man was running for the lake, his gun still firing from the hip in short bursts. Bond fired and missed and fired again. The man's legs buckled, but his momentum still carried him forward. He crashed into the water. The clenched finger went on firing the gun aimlessly up towards the blue sky until the water throttled the mechanism.

The seconds wasted on the extra shot had given Major Gonzales a chance. He had got behind the body of the first gunman and now he opened up on Bond with the tommy-gun. Whether he had seen Bond or was only firing at the flashes from the Savage he was doing well. Bullets zipped into the maple and slivers of wood splattered into Bond's face. Bond fired twice. The dead body of the gunman jerked. Too low! Bond reloaded and took fresh aim. A snapped branch fell across his rifle. He shook it free, but now Gonzales was up and running forward to the group of garden furniture. He hurled the iron table on its side and got behind it as two snap shots from Bond kicked chunks out of the lawn at his heels. With this solid cover his shooting became more accurate, and burst after burst, now from the right of the table and now from the left, crashed into the maple tree while Bond's single shots clanged against the white iron or whined off across the lawn. It was not easy to traverse the telescopic sight quickly from one side of the table to the other and Gonzales was cunning with his changes. Again and again his bullets thudded into the trunk beside and above Bond. Bond ducked and ran swiftly to the right. He would fire, standing, from the open meadow and catch Gonzales off-guard. But even as he ran, he saw Gonzales dart from behind the iron table. He also had decided to end the stalemate. He was running for the dam to get across and into the woods and come up after Bond. Bond stood and threw up his rifle. As he did so, Gonzales also saw him. He went down on one knee on the dam wall and sprayed a burst at Bond. Bond stood icily, hearing the bullets. The crossed hairs centred on Gonzales's chest. Bond squeezed the trigger. Gonzales rocked. He half got to his feet. He raised

his arms and, with his gun still pumping bullets into the sky, dived clumsily face forward into the water.

Bond watched to see if the face would rise. It did not. Slowly he lowered his rifle and wiped the back of his arm across his face.

The echoes, the echoes of much death, rolled to and fro across the valley. Away to the right, in the trees beyond the lake, he caught a glimpse of the two girls running up towards the house. Soon they, if the maids had not already done so, would be on to the State troopers. It was time to get moving.

Bond walked back through the meadow to the lone maple. The girl was there. She stood up against the trunk of the tree with her back to him. Her head was cradled in her arms against the tree. Blood was running down the right arm and dripping to the ground, and there was a black stain high up on the sleeve of the dark green shirt. The bow and quiver of arrows lay at her feet. Her shoulders were shaking.

Bond came up behind her and put a protective arm across her shoulders. He said softly: 'Take it easy, Judy. It's all over now. How bad's the arm?'

She said in a muffled voice: 'It's nothing. Something hit me. But that was awful. I didn't—I didn't know it would be like that.'

Bond pressed her arm reassuringly. 'It had to be done. They'd have got you otherwise. Those were pro killers—the worst. But I told you this sort of thing

was man's work. Now then, let's have a look at your arm. We've got to get going—over the border. The troopers'll be here before long.'

She turned. The beautiful wild face was streaked with sweat and tears. Now the grey eyes were soft and obedient. She said: 'It's nice of you to be like that. After the way I was. I was sort of—sort of wound up.'

She held out her arm. Bond reached for the hunting-knife at her belt and cut off her shirt-sleeve at the shoulder. There was the bruised, bleeding gash of a bullet wound across the muscle. Bond took out his own khaki handkerchief, cut it into three lengths and joined them together. He washed the wound clean with the coffee and whisky, and then took a thick slice of bread from his haversack and bound it over the wound. He cut her shirt-sleeve into a sling and reached behind her neck to tie the knot. Her mouth was inches from his. The scent of her body had a warm animal tang. Bond kissed her once softly on the lips and once again, hard. He tied the knot. He looked into the grey eyes close to his. They looked surprised and happy. He kissed her again at each corner of the mouth and the mouth slowly smiled. Bond stood away from her and smiled back. He softly picked up her right hand and slipped the wrist into the sling. She said docilely: 'Where are you taking me?'

Bond said: 'I'm taking you to London. There's this old man who will want to see you. But first we've got to get over into Canada, and I'll talk to a friend in Ottawa and get your passport straightened out. You'll have to get some clothes and things. It'll take a few days. We'll be staying in a place called the KO-ZEE Motel.'

She looked at him. She was a different girl. She said softly: 'That'll be nice. I've never stayed in a motel.'

Bond bent down and picked up his rifle and knapsack and slung them over one shoulder. Then he hung her bow and quiver over the other, and turned and started up through the meadow.

She fell in behind and followed him, and as she walked she pulled the tired bits of golden-rod out of her hair and undid a ribbon and let the pale gold hair fall down to her shoulders.

Risico

{ Chapter Four – For Your Eyes Only }

‘In this pizniss is much risico.’

The words came softly through the thick brown moustache. The hard black eyes moved slowly over Bond’s face and down to Bond’s hands which were carefully shredding a paper match on which was printed *Albergo Colombo d’Oro*.

James Bond felt the inspection. The same surreptitious examination had been going on since he had met the man two hours before at the rendezvous in the Excelsior bar. Bond had been told to look for a man with a heavy moustache who would be sitting by himself drinking an Alexandra. Bond had been amused by this secret recognition signal. The creamy, feminine drink was so much cleverer than the folded newspaper, the flower in the buttonhole, the yellow gloves that were the hoary, slipshod call-signs between agents. It had also the great merit of being able to operate alone, without its owner. And Kristatos had started off with a little test. When Bond had come into the bar and looked round there had been perhaps twenty people in the room. None of them had a moustache. But on a corner table at the far side of the tall, discreet room, flanked by a saucer of olives and another of cashew nuts, stood the tall-stemmed glass of cream and vodka. Bond went straight over to the table, pulled out a chair and sat down.

The waiter came. 'Good evening, sir. Signor Kristatos is at the telephone.'

Bond nodded. 'A Negroni. With Gordon's, please.'

The waiter walked back to the bar. 'Negroni. Uno. Gordon's.'

'I am so sorry.' The big hairy hand picked up the small chair as if it had been as light as a match-box and swept it under the heavy hips. 'I had to have a word with Alfredo.'

There had been no handshake. These were old acquaintances. In the same line of business, probably. Something like import and export. The younger one looked American. No. Not with those clothes. English.

Bond returned the fast serve. 'How's his little boy?'

The black eyes of Signor Kristatos narrowed. Yes, they had said this man was a professional. He spread his hands. 'Much the same. What can you expect?'

'Polio is a terrible thing.'

The Negroni came. The two men sat back comfortably, each one satisfied that he had to do with a man in the same league. This was rare in 'The Game'. So many times, before one had even started on a tandem assignment like this, one had lost confidence in the outcome. There was so often, at least in Bond's imagination, a faint smell of burning in the air at such a rendezvous. He knew

it for the sign that the fringe of his cover had already started to smoulder. In due course the smouldering fabric would burst into flames and he would be *brûlé*. Then the game would be up and he would have to decide whether to pull out or wait and get shot at by someone. But at this meeting there had been no fumbling.

Later that evening, at the little restaurant off the Piazza di Spagna called the Colomba d'Oro, Bond was amused to find that he was still on probation. Kristatos was still watching and weighing him, wondering if he could be trusted. This remark about the risky business was as near as Kristatos had so far got to admitting that there existed any business between the two of them. Bond was encouraged. He had not really believed in Kristatos. But surely all these precautions could only mean that M's intuition had paid off—that Kristatos knew something big.

Bond dropped the last shred of match into the ashtray. He said mildly: 'I was once taught that any business that pays more than ten per cent or is conducted after nine o'clock at night is a dangerous business. The business which brings us together pays up to one thousand per cent and is conducted almost exclusively at night. On both counts it is obviously a risky business.' Bond lowered his voice. 'Funds are available. Dollars, Swiss francs, Venezuelan bolivars—anything convenient.'

'That makes me glad. I have already too much lire.' Signor Kristatos picked up the folio menu. 'But let us feed on something. One should not decide important pizniss on a hollow stomach.'

A week earlier M had sent for Bond. M was in a bad temper. ‘Got anything on, 007?’

‘Only paper-work, sir.’

‘What do you mean, only paper-work?’ M jerked his pipe towards his loaded in-tray. ‘Who hasn’t got paper-work?’

‘I meant nothing active, sir.’

‘Well, say so.’ M picked up a bundle of dark red files tied together with tape and slid them so sharply across the desk that Bond had to catch them. ‘And here’s some more paper-work. Scotland Yard stuff mostly—their narcotics people. Wads from the Home Office and the Ministry of Health, and some nice thick reports from the International Opium Control people in Geneva. Take it away and read it. You’ll need today and most of tonight. Tomorrow you fly to Rome and get after the big men. Is that clear?’

Bond said that it was. The state of M’s temper was also explained. There was nothing that made him more angry than having to divert his staff from their primary duty. This duty was espionage, and when necessary sabotage and subversion. Anything else was a misuse of the Service and of Secret Funds which, God knows, were meagre enough.

‘Any questions?’ M’s jaw stuck out like the prow of a ship. The jaw seemed to tell Bond to pick up the files and get the hell out of the office and let M move on to something important.

Bond knew that a part of all this—if only a small part—was an act. M had certain bees in his bonnet. They were famous in the Service, and M knew they were. But that did not mean that he would allow them to stop buzzing. There were queen bees, like the misuse of the Service, and the search for true as distinct from wishful intelligence, and there were worker bees. These included such idiosyncrasies as not employing men with beards, or those who were completely bilingual, instantly dismissing men who tried to bring pressure to bear on him through family relationships with members of the Cabinet, mistrusting men or women who were too ‘dressy’, and those who called him ‘sir’ off-duty; and having an exaggerated faith in Scotsmen. But M was ironically conscious of his obsessions, as, thought Bond, a Churchill or a Montgomery were about theirs. He never minded his bluff, as it partly was, being called on any of them. Moreover, he would never have dreamed of sending Bond out on an assignment without proper briefing.

Bond knew all this. He said mildly: ‘Two things, sir. Why are we taking this thing on, and what lead, if any, have Station I got towards the people involved in it?’

M gave Bond a hard, sour look. He swiveled his chair sideways so that he could watch the high, scudding October clouds through the broad window. He

reached out for his pipe, blew through it sharply, and then, as if this action had let off the small head of steam, replaced it gently on the desk. When he spoke, his voice was patient, reasonable. ‘As you can imagine, 007, I do not wish the Service to become involved in this drug business. Earlier this year I had to take you off other duties for a fortnight so that you could go to Mexico and chase off that Mexican grower. You nearly got yourself killed. I sent you as a favour to the Special Branch. When they asked for you again to tackle this Italian gang I refused. Ronnie Vallance went behind my back to the Home Office and the Ministry of Health. The Ministers pressed me. I said that you were needed here and that I had no one else to spare. Then the two Ministers went to the P.M.’ M paused. ‘And that was that. I must say the P.M. was very persuasive. Took the line that heroin, in the quantities that have been coming in, is an instrument of psychological warfare—that it saps a country’s strength. He said he wouldn’t be surprised to find that this wasn’t just a gang of Italians out to make big money—that subversion and not money was at the back of it.’ M smiled sourly. ‘I expect Ronnie Vallance thought up that line of argument. Apparently his narcotics people have been having the devil of a time with the traffic—trying to stop it getting a hold on the teenagers as it has in America. Seems the dance halls and the amusement arcades are full of peddlers. Vallance’s Ghost Squad have managed to penetrate back up the line to one of the middle-men, and there’s no doubt it’s all coming from Italy, hidden in Italian tourists’ cars. Vallance has done what he can through the Italian police and Interpol, and got nowhere. They get so far back up the pipeline, arrest a few little people, and then, when they seem to be getting near the centre, there’s a blank wall. The inner ring of distributors are too frightened or too well paid.’

Bond interrupted. 'Perhaps there's protection somewhere, sir. That Montesi business didn't look so good.'

M shrugged impatiently. 'Maybe, maybe. And you'll have to watch out for that too, but my impression is that the Montesi case resulted in a pretty extensive clean-up. Anyway, when the P.M. gave me the order to get on with it, it occurred to me to have a talk with Washington. C.I.A. were very helpful. You know the Narcotics Bureau have a team in Italy. Have had ever since the War. They're nothing to do with C.I.A.—run by the American Treasury Department, of all people. The American Treasury control a so-called Secret Service that looks after drug smuggling and counterfeiting. Pretty crazy arrangement. Often wonder what the F.B.I. must think of it. However.' M slowly swivelled his chair away from the window. He linked his hands behind his head and leaned back, looking across the desk at Bond. 'The point is that the C.I.A. Rome Station works pretty closely with this little narcotics team. Has to, to prevent crossed lines and so on. And C.I.A.—Alan Dulles himself, as a matter of fact—gave me the name of the top narcotics agent used by the Bureau. Apparently he's a double. Does a little smuggling as cover. Chap called Kristatos. Dulles said that of course he couldn't involve his people in any way and he was pretty certain the Treasury Department wouldn't welcome their Rome Bureau playing too closely with us. But he said that, if I wished, he would get word to this Kristatos that one of our, er, best men would like to make contact with a view to doing business. I said I would much appreciate that, and yesterday I got word that the rendezvous is fixed for the

day after tomorrow.’ M gestured towards the files in front of Bond. ‘You’ll find all the details in there.’

There was a brief silence in the room. Bond was thinking that the whole affair sounded unpleasant, probably dangerous and certainly dirty. With the last quality in mind, Bond got to his feet and picked up the files. ‘All right, sir. It looks like money. How much will we pay for the traffic to stop?’

M let his chair tip forward. He put his hands flat down on the desk, side by side. He said roughly: ‘A hundred thousand pounds. In any currency. That’s the P.M.’s figure. But I don’t want you to get hurt. Certainly not picking other people’s coals out of the fire. So you can go up to another hundred thousand if there’s bad trouble. Drugs are the biggest and tightest ring in crime.’ M reached for his in-basket and took out a file of signals. Without looking up he said: ‘Look after yourself.’

Signor Kristatos picked up the menu. He said: ‘I do not beat about bushes, Mr Bond. How much?’

‘Fifty thousand pounds for one hundred per cent results.’

Kristatos said indifferently: ‘Yes. Those are important funds. I shall have melon with prosciutto ham and a chocolate ice-cream. I do not eat greatly at night. These people have their own Chianti. I commend it.’

The waiter came and there was a brisk rattle of Italian. Bond ordered Tagliatelli Verdi with a Genoese sauce which Kristatos said was improbably concocted of basil, garlic and fir-cones.

When the waiter had gone, Kristatos sat and chewed silently on a wooden toothpick. His face gradually became dark and glum as if bad weather had come to his mind. The black, hard eyes that glanced restlessly at everything in the restaurant except Bond, glittered. Bond guessed that Kristatos was wondering whether or not to betray somebody. Bond said encouragingly: ‘In certain circumstances, there might be more.’

Kristatos seemed to make up his mind. He said: ‘So?’ He pushed back his chair and got up. ‘Forgive me. I must visit the toletta.’ He turned and walked swiftly towards the back of the restaurant.

Bond was suddenly hungry and thirsty. He poured out a large glass of Chianti and swallowed half of it. He broke a roll and began eating, smothering each mouthful with deep yellow butter. He wondered why rolls and butter are delicious only in France and Italy. There was nothing else on his mind. It was just a question of waiting. He had confidence in Kristatos. He was a big, solid man who was trusted by the Americans. He was probably making some telephone call that would be decisive. Bond felt in good spirits. He watched

the passers-by through the plate-glass window. A man selling one of the Party papers went by on a bicycle. Flying from the basket in front of the handle-bars was a pennant. In red on white it said: PROGRESSO?—SI! AVVENTURI?—NO! Bond smiled. That was how it was. Let it so remain for the rest of the assignment.

On the far side of the square, rather plain room, at the corner table by the caisse, the plump fair-haired girl with the dramatic mouth said to the jovial good-living man with the thick rope of spaghetti joining his face to his plate: ‘He has a rather cruel smile. But he is very handsome. Spies aren’t usually so good-looking. Are you sure you are right, mein Täubchen?’

The man’s teeth cut through the rope. He wiped his mouth on a napkin already streaked with tomato sauce, belched sonorously and said: ‘Santos is never wrong about these things. He has a nose for spies. That is why I chose him as the permanent tail for that bastard Kristatos. And who else but a spy would think of spending an evening with the pig? But we will make sure.’ The man took out of his pocket one of those cheap tin snappers that are sometimes given out, with paper hats and whistles, on carnival nights. It gave one sharp click. The maître d’hôtel, on the far side of the room, stopped whatever he was doing and hurried over.

‘Si, padrone.’

The man beckoned. The maître d'hôtel leant over and received the whispered instructions. He nodded briefly, walked over to a door near the kitchens marked UFFICIO, and went in and closed the door behind him.

Phase by phase, in a series of minute moves, an exercise that had long been perfected was then smoothly put into effect. The man near the *caisse* munched his spaghetti and critically observed each step in the operation as if it had been a fast game of chess.

The maître d'hôtel came out of the door marked UFFICIO, hurried across the restaurant and said loudly to his No. 2: 'An extra table for four. Immediately.' The No. 2 gave him a direct look and nodded. He followed the maître d'hôtel over to a space adjoining Bond's table, clicked his fingers for help, borrowed a chair from one table, a chair from another table and, with a bow and an apology, the spare chair from Bond's table. The fourth chair was being carried over from the direction of the door marked UFFICIO by the maître d'hôtel. He placed it square with the others, a table was lowered into the middle and glass and cutlery were deftly laid. The maître d'hôtel frowned. 'But you have laid a table for four. I said three—for three people.' He casually took the chair he had himself brought to the table and switched it to Bond's table. He gave a wave of the hand to dismiss his helpers and everyone dispersed about their business.

The innocent little flurry of restaurant movement had taken about a minute. An innocuous trio of Italians came into the restaurant. The maître d'hôtel

greeted them personally and bowed them to the new table, and the gambit was completed.

Bond had hardly been conscious of it. Kristatos returned from whatever business he had been about, their food came and they got on with the meal.

While they ate they talked about nothing—the election chances in Italy, the latest Alfa Romeo, Italian shoes compared with English. Kristatos talked well. He seemed to know the inside story of everything. He gave information so casually that it did not sound like bluff. He spoke his own kind of English with an occasional phrase borrowed from other languages. It made a lively mixture. Bond was interested and amused. Kristatos was a tough insider—a useful man. Bond was not surprised that the American Intelligence people found him good value.

Coffee came. Kristatos lit a thin black cigar and talked through it, the cigar jumping up and down between the thin straight lips. He put both hands flat on the table in front of him. He looked at the table-cloth between them and said softly: ‘This pizniss. I will play with you. To now I have only played with the Americans. I have not told them what I am about to tell you. There was no requirement. This machina does not operate with America. These things are closely regulated. This machine operates only with England. Yes? Capito?’

‘I understand. Everyone has his own territory. It’s the usual way in these things.’

‘Exact. Now, before I give you the informations, like good commercials we make the terms. Yes?’

‘Of course.’

Signor Kristatos examined the table-cloth more closely. ‘I wish for ten thousand dollars American, in paper of small sizes, by tomorrow lunch-time. When you have destroyed the machina I wish for a further twenty thousand.’ Signor Kristatos briefly raised his eyes and surveyed Bond’s face. ‘I am not greedy. I do not take all your funds, isn’t it?’

‘The price is satisfactory.’

‘Bueno. Second term. There is no telling where you get these informations from. Even if you are beaten.’

‘Fair enough.’

‘Third term. The head of this machina is a bad man.’ Signor Kristatos paused and looked up. The black eyes held a red glint. The clenched dry lips pulled away from the cigar to let the words out. ‘He is to be destrutto—killed.’

Bond sat back. He gazed quizzically at the other man who now leaned slightly forward over the table, waiting. So the wheels had now shown within the wheels! This was a private vendetta of some sort. Kristatos wanted to get himself a gunman. And he was not paying the gunman, the gunman was

paying him for the privilege of disposing of an enemy. Not bad! The fixer was certainly working on a big fix this time—using the Secret Service to pay off his private scores. Bond said softly: ‘Why?’

Signor Kristatos said indifferently: ‘No questions catch no lies.’

Bond drank down his coffee. It was the usual story of big syndicate crime. You never saw more than the tip of the iceberg. But what did that matter to him? He had been sent to do one specific job. If his success benefited others, nobody, least of all M, could care less. Bond had been told to destroy the machine. If this unnamed man was the machine, it would be merely carrying out orders to destroy the man. Bond said: ‘I cannot promise that. You must see that. All I can say is that if the man tries to destroy me, I will destroy him.’

Signor Kristatos took a toothpick out of the holder, stripped off the paper and set about cleaning his finger-nails. When he had finished one hand he looked up. He said: ‘I do not often gamble on incertitudes. This time I will do so because it is you who are paying me, and not me you. Is all right? So now I will give you the informations. Then you are alone—solo. Tomorrow night I fly to Karachi. I have important pizniss there. I can only give you the informations. After that you run with the ball and—’ he threw the dirty toothpick down on the table—‘Che sara, sara.’

‘All right.’

Signor Kristatos edged his chair nearer to Bond. He spoke softly and quickly. He gave specimen dates and names to document his narrative. He never hesitated for a fact and he did not waste time on irrelevant detail. It was a short story and a pithy one. There were two thousand American gangsters in the country—Italian-Americans who had been convicted and expelled from the United States. These men were in a bad way. They were on the blackest of all police lists and, because of their records, their own people were wary of employing them. A hundred of the toughest among them had pooled their funds and small groups from this elite had moved to Beirut, Istanbul, Tangier and Macao—the great smuggling centres of the world. A further large section acted as couriers, and the bosses had acquired, through nominees, a small and respectable pharmaceutical business in Milan. To this centre the outlying groups smuggled opium and its derivatives. They used small craft across the Mediterranean, a group of stewards in an Italian charter airline and, as a regular weekly source of supply, the through carriage of the Orient Express in which whole sections of bogus upholstery were fitted by bribed members of the train cleaners in Istanbul. The Milan firm—Pharmacia Colomba S.A.—acted as a clearing-house and as a convenient centre for breaking down the raw opium into heroin. Thence the couriers, using innocent motor-cars of various makes, ran a delivery service to the middle-men in England.

Bond interrupted. ‘Our Customs are pretty good at spotting that sort of traffic. There aren’t many hiding-places in a car they don’t know about. Where do these men carry the stuff?’

‘Always in the spare wheel. You can carry twenty thousand pounds worth of heroin in one spare wheel.’

‘Don’t they ever get caught—either bringing the stuff in to Milan or taking it on?’

‘Certainly. Many times. But these are well-trained men. And they are tough. They never talk. If they are convicted, they receive ten thousand dollars for each year spent in prison. If they have families, they are cared for. And when all goes well they make good money. It is a co-operative. Each man receives his tranche of the brutto. Only the chief gets a special tranche.’

‘All right. Well, who is this man?’

Signor Kristatos put his hand up to the cheroot in his mouth. He kept the hand there and spoke softly from behind it. ‘Is a man they call “The Dove”, Enrico Colombo. Is the padrone of this restaurant. That is why I bring you here, so that you may see him. Is the fat man who sits with a blonde woman. At the table by the cassa. She is from Vienna. Her name is Lisl Baum. A luxus whore.’

Bond said reflectively: ‘She is, is she?’ He did not need to look. He had noticed the girl, as soon as he had sat down at the table. Every man in the restaurant would have noticed her. She had the gay, bold, forthcoming looks the Viennese are supposed to have and seldom do. There was a vivacity and a charm about her that lit up her corner of the room. She had the wildest possible

urchin cut in ash-blonde, a pert nose, a wide laughing mouth and a black ribbon round her throat. James Bond knew that her eyes had been on him at intervals throughout the evening. Her companion had seemed just the type of rich, cheerful, good-living man she would be glad to have as her lover for a while. He would give her a good time. He would be generous. There would be no regrets on either side. On the whole, Bond had vaguely approved of him. He liked cheerful, expansive people with a zest for life. Since he, Bond, could not have the girl, it was at least something that she was in good hands. But now? Bond glanced across the room. The couple were laughing about something. The man patted her cheek and got up and went to the door marked UFFICIO and went through and shut the door. So this was the man who ran the great pipeline into England. The man with M's price of a hundred thousand pounds on his head. The man Kristatos wanted Bond to kill. Well, he had better get on with the job. Bond stared rudely across the room at the girl. When she lifted her head and looked at him, he smiled at her. Her eyes swept past him, but there was a half smile, as if for herself, on her lips, and when she took a cigarette out of her case and lit it and blew the smoke straight up towards the ceiling there was an offering of the throat and the profile that Bond knew were for him.

It was nearing the time for the after-cinema trade. The maître d'hôtel was supervising the clearing of the unoccupied tables and the setting up of new ones. There was the usual bustle and slapping of napkins across chair-seats and tinkle of glass and cutlery being laid. Vaguely Bond noticed the spare chair at his table being whisked away to help build up a near-by table for six. He began asking Kristatos specific questions—the personal habits of Enrico

Colombo, where he lived, the address of his firm in Milan, what other business interests he had. He did not notice the casual progress of the spare chair from its fresh table to another, and then to another, and finally through the door marked UFFICIO. There was no reason why he should.

When the chair was brought into his office, Enrico Colombo waved the maître d'hôtel away and locked the door behind him. Then he went to the chair and lifted off the squab cushion and put it on his desk. He unzipped one side of the cushion and withdrew a Grundig tape-recorder, stopped the machine, ran the tape back, took it off the recorder and put it on a playback and adjusted the speed and volume. Then he sat down at his desk and lit a cigarette and listened, occasionally making further adjustments and occasionally repeating passages. At the end, when Bond's tinny voice said 'She is, is she?' and there was a long silence interspersed with background noises from the restaurant, Enrico Colombo switched off the machine and sat looking at it. He looked at it for a full minute. His face showed nothing but acute concentration on his thoughts. Then he looked away from the machine and into nothing and said softly, out loud: 'Son-a-beech.' He got slowly to his feet and went to the door and unlocked it. He looked back once more at the Grundig, said 'Son-a-beech' again with more emphasis and went out and back to his table.

Enrico Colombo spoke swiftly and urgently to the girl. She nodded and glanced across the room at Bond. He and Kristatos were getting up from the table. She said to Colombo in a low, angry voice: 'You are a disgusting man.'

Everybody said so and warned me against you. They were right. Just because you give me dinner in your lousy restaurant you think you have the right to insult me with your filthy propositions’—the girl’s voice had got louder. Now she had snatched up her handbag and had got to her feet. She stood beside the table directly in the line of Bond’s approach on his way to the exit.

Enrico Colombo’s face was black with rage. Now he, too, was on his feet. ‘You goddam Austrian beech——’

‘Don’t dare insult my country, you Italian toad.’ She reached for a half-full glass of wine and hurled it accurately in the man’s face. When he came at her it was easy for her to back the few steps into Bond who was standing with Kristatos politely waiting to get by.

Enrico Colombo stood panting, wiping the wine off his face with a napkin. He said furiously to the girl: ‘Don’t ever show your face inside my restaurant again.’ He made the gesture of spitting on the floor between them, turned and strode off through the door marked UFFICIO.

The maître d’hôtel had hurried up. Everyone in the restaurant had stopped eating. Bond took the girl by the elbow. ‘May I help you find a taxi?’

She jerked herself free. She said, still angry: ‘All men are pigs.’ She remembered her manners. She said stiffly: ‘You are very kind.’ She moved haughtily towards the door with the men in her wake.

There was a buzz in the restaurant and a renewed clatter of knives and forks. Everyone was delighted with the scene. The maître d'hôtel, looking solemn, held open the door. He said to Bond: 'I apologize, Monsieur. And you are very kind to be of assistance.' A cruising taxi slowed. He beckoned it to the pavement and held open the door.

The girl got in. Bond firmly followed and closed the door. He said to Kristatos through the window: 'I'll telephone you in the morning. All right?' Without waiting for the man's reply he sat back in the seat. The girl had drawn herself away into the farthest corner. Bond said: 'Where shall I tell him?'

'Hotel Ambassadori.'

They drove a short way in silence. Bond said: 'Would you like to go somewhere first for a drink?'

'No thank you.' She hesitated. 'You are very kind, but tonight I am tired.'

'Perhaps another night.'

'Perhaps, but I go to Venice tomorrow.'

'I shall also be there. Will you have dinner with me tomorrow night?'

The girl smiled. She said: 'I thought Englishmen were supposed to be shy. You are English, aren't you? What is your name? What do you do?'

‘Yes, I’m English. My name’s Bond—James Bond. I write books—adventure stories. I’m writing one now about drug smuggling. It’s set in Rome and Venice. The trouble is that I don’t know enough about the trade. I am going round picking up stories about it. Do you know any?’

‘So that is why you were having dinner with that Kristatos. I know of him. He has a bad reputation. No. I don’t know any stories. I only know what everybody knows.’

Bond said enthusiastically: ‘But that’s exactly what I want. When I said “stories” I didn’t mean fiction. I meant the sort of high-level gossip that’s probably pretty near the truth. That sort of thing’s worth diamonds to a writer.’

She laughed. ‘You mean that ... diamonds?’

Bond said: ‘Well, I don’t earn all that as a writer, but I’ve already sold an option on this story for a film, and if I can make it authentic enough I daresay they’ll actually buy the film.’ He reached out and put his hand over hers in her lap. She did not take her hand away. ‘Yes, diamonds. A diamond clip from Van Cleef. Is it a deal?’

Now she took her hand away. They were arriving at the Ambassadors. She picked up her bag from the seat beside her. She turned on the seat so that she faced him. The commissionaire opened the door and the light from the street turned her eyes into stars. She examined his face with a certain seriousness.

She said: ‘All men are pigs, but some are lesser pigs than others. All right. I will meet you. But not for dinner. What I may tell you is not for public places. I bathe every afternoon at the Lido. But not at the fashionable plage. I bathe at the Bagni Alberoni, where the English poet Byron used to ride his horse. It is at the tip of the peninsula. The Vaporetto will take you there. You will find me there the day after tomorrow—at three in the afternoon. I shall be getting my last sunburn before the winter. Among the sand-dunes. You will see a pale yellow umbrella. Underneath it will be me.’ She smiled. ‘Knock on the umbrella and ask for Fräulein Lisl Baum.’

She got out of the taxi. Bond followed. She held out her hand. ‘Thank you for coming to my rescue. Good night.’

Bond said: ‘Three o’clock then. I shall be there. Good night.’

She turned and walked up the curved steps of the hotel. Bond looked after her thoughtfully, and then turned and got back into the taxi and told the man to take him to the Nazionale. He sat back and watched the neon signs ribbon past the window. Things, including the taxi, were going almost too fast for comfort. The only one over which he had any control was the taxi. He leant forward and told the man to drive more slowly.

The best train from Rome to Venice is the Laguna express that leaves every day at midday. Bond, after a morning that was chiefly occupied with difficult

talks with his London Headquarters on Station I's scrambler, caught it by the skin of his teeth. The Laguna is a smart, streamlined affair that looks and sounds more luxurious than it is. The seats are made for small Italians and the restaurant car staff suffer from the disease that afflicts their brethren in the great trains all over the world—a genuine loathing for the modern traveler and particularly for the foreigner. Bond had a gangway seat over the axle in the rear aluminum coach. If the seven heavens had been flowing by outside the window he would not have cared. He kept his eyes inside the train, read a jerking book, spilled Chianti over the table-cloth and shifted his long, aching legs and cursed the Ferrovie Italiane dello Stato.

But at last there was Mestre and the dead straight finger of rail across the eighteenth-century aquatint into Venice. Then came the unfailing shock of the beauty that never betrays and the soft swaying progress down the Grand Canal into a blood-red sunset, and the extreme pleasure—so it seemed—of the Gritti Palace that Bond should have ordered the best double room on the first floor.

That evening, scattering thousand-lira notes like leaves in Vallombrosa, James Bond sought, at Harry's Bar, at Florian's, and finally upstairs in the admirable Quadri, to establish to anyone who might be interested that he was what he had wished to appear to the girl—a prosperous writer who lived high and well. Then, in the temporary state of euphoria that a first night in Venice engenders, however high and serious the purpose of the visitor, James Bond walked back to the Gritti and had eight hours dreamless sleep.

May and October are the best months in Venice. The sun is soft and the nights are cool. The glittering scene is kinder to the eyes and there is a freshness in the air that helps one to hammer out those long miles of stone and terrazza and marble that are intolerable to the feet in summer. And there are fewer people. Although Venice is the one town in the world that can swallow up a hundred thousand tourists as easily as it can a thousand—hiding them down its side-streets, using them for crowd scenes on the piazzas, stuffing them into the vaporetti—it is still better to share Venice with the minimum number of packaged tours and Lederhosen.

Bond spent the next morning strolling the back-streets in the hope that he would be able to uncover a tail. He visited a couple of churches—not to admire their interiors but to discover if anyone came in after him through the main entrance before he left by the side door. No one was following him. Bond went to Florian's and had an Americano and listened to a couple of French culture-snobs discussing the imbalance of the containing façade of St Mark's Square. On an impulse, he bought a postcard and sent it off to his secretary who had once been with the Georgian Group to Italy and had never allowed Bond to forget it. He wrote: 'Venice is wonderful. Have so far inspected the railway station and the Stock Exchange. Very aesthetically satisfying. To the Municipal Waterworks this afternoon and then an old Brigitte Bardot at the Scala Cinema. Do you know a wonderful tune called "O Sole Mio"? It's v. romantic like everything here. JB.'

Pleased with his inspiration, Bond had an early luncheon and went back to his hotel. He locked the door of his room and took off his coat and ran over the

Walther PPK. He put up the safe and practised one or two quick draws and put the gun back in the holster. It was time to go. He went along to the landing-stage and boarded the twelve-forty vaporetto to Alberoni, out of sight across the mirrored lagoons. Then he settled down in a seat in the bows and wondered what was going to happen to him.

From the jetty at Alberoni, on the Venice side of the Lido peninsula, there is a half-mile dusty walk across the neck of land to the Bagni Alberoni facing the Adriatic. It is a curiously deserted world, this tip of the famous peninsula. A mile down the thin neck of land the luxury real estate development has petered out in a scattering of cracked stucco villas and bankrupt housing projects, and here there is nothing but the tiny fishing village of Alberoni, a sanatorium for students, a derelict experimental station belonging to the Italian Navy and some massive weed-choked gun emplacements from the last war. In the no man's land in the centre of this thin tongue of land is the Golf du Lido, whose brownish undulating fairways meander around the ruins of ancient fortifications. Not many people come to Venice to play golf, and the project is kept alive for its snob appeal by the grand hotels of the Lido. The golf-course is surrounded by a high wire fence hung at intervals, as if it protected something of great value or secrecy, with threatening Vietatos and Prohibitos. Around this wired enclave, the scrub and sand-hills have not even been cleared of mines, and amongst the rusting barbed wire are signs saying MINAS. PERICOLO DI MORTE beneath a roughly stencilled skull and cross-bones. The whole area is strange and melancholy and in extraordinary

contrast to the gay carnival world of Venice less than an hour away across the lagoons.

Bond was sweating slightly by the time he had walked the half-mile across the peninsula to the *plage*, and he stood for a moment under the last of the acacia trees that had bordered the dusty road to cool off while he got his bearings. In front of him was a rickety wooden archway whose central span said BAGNI ALBERONI in faded blue paint. Beyond were the lines of equally dilapidated wooden cabins, and then a hundred yards of sand and then the quiet blue glass of the sea. There were no bathers and the place seemed to be closed, but when he walked through the archway he heard the tinny sound of a radio playing Neapolitan music. It came from a ramshackle hut that advertised Coca-Cola and various Italian soft drinks. Deckchairs were stacked against its walls and there were two pedalos and a child's half-inflated sea-horse. The whole establishment looked so derelict that Bond could not imagine it doing business even at the height of the summer season. He stepped off the narrow duck-boards into the soft, burned sand and moved round behind the huts to the beach. He walked down to the edge of the sea. To the left, until it disappeared in the autumn heat haze, the wide empty sand swept away in a slight curve towards the Lido proper. To the right was half a mile of beach terminating in the sea-wall at the tip of the peninsula. The sea-wall stretched like a finger out into the silent mirrored sea, and at intervals along its top were the flimsy derricks of the octopus fishermen. Behind the beach were the sand-hills and a section of the wire fence surrounding the golf-course. On the edge of the sand-hills, perhaps five hundred yards away, there was a speck of bright yellow.

Bond set off towards it along the tide-line.

‘Ahem.’

The hands flew to the top scrap of bikini and pulled it up. Bond walked into her line of vision and stood looking down. The bright shadow of the umbrella covered only her face. The rest of her—a burned cream body in a black bikini on a black and white striped bath-towel—lay offered to the sun.

She looked up at him through half-closed eyelashes. ‘You are five minutes early and I told you to knock.’

Bond sat down close to her in the shade of the big umbrella. He took out a handkerchief and wiped his face. ‘You happen to own the only palm tree in the whole of this desert. I had to get underneath it as soon as I could. This is the hell of a place for a rendezvous.’

She laughed. ‘I am like Greta Garbo. I like to be alone.’

‘Are we alone?’

She opened her eyes wide. ‘Why not? You think I have brought a chaperone?’

‘Since you think all man are pigs ...’

‘Ah, but you are a gentleman pig,’ she giggled. ‘A milord pig. And anyway, it is too hot for that kind of thing. And there is too much sand. And besides this is a business meeting, no? I tell you stories about drugs and you give me a diamond clip. From Van Cleef. Or have you changed your mind?’

‘No. That’s how it is. Where shall we begin?’

‘You ask the questions. What is it you want to know?’ She sat up and pulled her knees to her between her arms. Flirtation had gone out of her eyes and they had become attentive, and perhaps a little careful.

Bond noticed the change. He said casually, watching her: ‘They say your friend Colombo is a big man in the game. Tell me about him. He would make a good character for my book—disguised, of course. But it’s the detail I need. How does he operate, and so on? That’s not the sort of thing a writer can invent.’

She veiled her eyes. She said: ‘Enrico would be very angry if he knew that I had told any of his secrets. I don’t know what he would do to me.’

‘He will never know.’

She looked at him seriously. ‘Lieber Mr Bond, there is very little that he does not know. And he is also quite capable of acting on a guess. I would not be surprised’—Bond caught her quick glance at his watch—‘if it had crossed his mind to have me followed here. He is a very suspicious man.’ She put her

hand out and touched his sleeve. Now she looked nervous. She said urgently: 'I think you had better go now. This has been a great mistake.'

Bond openly looked at his watch. It was three-thirty. He moved his head so that he could look behind the umbrella and back down the beach. Far down by the bathing-huts, their outlines dancing slightly in the heat haze, were three men in dark clothes. They were walking purposefully up the beach, their feet keeping step as if they were a squad.

Bond got to his feet. He looked down at the bent head. He said drily: 'I see what you mean. Just tell Colombo that from now on I'm writing his life-story. And I'm a very persistent writer. So long.' Bond started running up the sand towards the tip of the peninsula. From there he could double back down the other shore to the village and the safety of people.

Down the beach the three men broke into a fast jog-trot, elbows and legs pounding in time with each other as if they were long-distance runners out for a training spin. As they jogged past the girl, one of the men raised a hand. She raised hers in answer and then lay down on the sand and turned over—perhaps so that her back could now get its toasting, or perhaps because she did not want to watch the man-hunt.

Bond took off his tie as he ran and put it in his pocket. It was very hot and he was already sweating profusely. But so would the three men be. It was a question who was in better training. At the tip of the peninsula, Bond clambered up on to the sea-wall and looked back. The men had hardly gained,

but now two of them were fanning out to cut round the edge of the golf-course boundary. They did not seem to mind the danger notices with the skulls and cross-bones. Bond, running fast down the wide sea-wall, measured angles and distances. The two men were cutting across the base of the triangle. It was going to be a close call.

Bond's shirt was already soaked and his feet were beginning to hurt. He had run perhaps a mile. How much farther to safety? At intervals along the sea-wall the breeches of antique cannon had been sunk in the concrete. They would be mooring-posts for the fishing-fleets sheltering in the protection of the lagoons before taking to the Adriatic. Bond counted his steps between two of them. Fifty yards. How many black knobs to the end of the wall—to the first houses of the village? Bond counted up to thirty before the line vanished into the heat haze. Probably another mile to go. Could he do it, and fast enough to beat the two flankers? Bond's breath was already rasping in his throat. Now even his suit was soaked with sweat and the cloth of his trousers was chafing his legs. Behind him, three hundred yards back, was one pursuer. To his right, dodging among the sand-dunes and converging fast, were the other two. To his left was a twenty-foot slope of masonry to the green tide ripping out into the Adriatic.

Bond was planning to slow down to a walk and keep enough breath to try and shoot it out with the three men, when two things happened in quick succession. First he saw through the haze ahead a group of spear-fishermen. There were about half a dozen of them, some in the water and some sunning themselves on the sea-wall. Then, from the sand-dunes came the deep roar of

an explosion. Earth and scrub and what might have been bits of a man fountained briefly into the air, and a small shock-wave hit him. Bond slowed. The other man in the dunes had stopped. He was standing stock-still. His mouth was open and a frightened jabber came from it. Suddenly he collapsed on the ground with his arms wrapped round his head. Bond knew the signs. He would not move again until someone came and carried him away from there. Bond's heart lifted. Now he had only about two hundred yards to go to the fishermen. They were already gathering into a group, looking towards him. Bond summoned a few words of Italian and rehearsed them. 'Mi Ingles. Prego, dove il carabinieri.' Bond glanced over his shoulder. Odd, but despite the witnessing spear-fishers, the man was still coming on. He had gained and was only about a hundred yards behind. There was a gun in his hand. Now, ahead, the fishermen had fanned out across Bond's path. They had harpoon guns held at the ready. In the centre was a big man with a tiny red bathing-slip hanging beneath his stomach. A green mask was slipped back on to the crown of his head. He stood with his blue swim-fins pointing out and his arms akimbo. He looked like Mr. Toad of *Toad Hall* in Technicolor. Bond's amused thought died in him stillborn. Panting, he slowed to a walk. Automatically his sweaty hand felt under his coat for the gun and drew it out. The man in the centre of the arc of pointing harpoons was Enrico Colombo.

Colombo watched him approach. When he was twenty yards away, Colombo said quietly: 'Put away your toy, Mr Bond of the Secret Service. These are CO₂ harpoon guns. And stay where you are. Unless you wish to make a copy of Mantegna's St Sebastian.' He turned to the man on his right. He spoke in English. 'At what range was that Albanian last week?'

‘Twenty yards, padrone. And the harpoon went right through. But he was a fat man—perhaps twice as thick as this one.’

Bond stopped. One of the iron bollards was beside him. He sat down and rested the gun on his knee. It pointed at the centre of Colombo’s big stomach. He said: ‘Five harpoons in me won’t stop one bullet in you, Colombo.’

Colombo smiled and nodded, and the man who had been coming softly up behind Bond hit him once hard in the base of the skull with the butt of his Luger.

When you come to from being hit on the head the first reaction is a fit of vomiting. Even in his wretchedness Bond was aware of two sensations—he was in a ship at sea, and someone, a man, was wiping his forehead with a cool wet towel and murmuring encouragement in bad English. ‘Is okay, amigo. Take him easy. Take him easy.’

Bond fell back on his bunk, exhausted. It was a comfortable small cabin with a feminine smell and dainty curtains and colours. A sailor in a tattered vest and trousers—Bond thought he recognized him as one of the spear-fishermen—was bending over him. He smiled when Bond opened his eyes. ‘Is better, yes? Subito okay.’ He rubbed the back of his neck in sympathy. ‘It

hurts for a little. Soon it will only be a black. Beneath the hair. The girls will see nothing.'

Bond smiled feebly and nodded. The pain of the nod made him screw up his eyes. When he opened them the sailor shook his head in admonition. He brought his wrist-watch close up to Bond's eyes. It said seven o'clock. He pointed with his little finger at the figure nine. 'Mangiare con Padrone, Si?'

Bond said: 'Si.'

The man put his hand to his cheek and laid his head on one side. 'Dormire.'

Bond said 'Si' again and the sailor went out of the cabin and closed the door without locking it.

Bond got gingerly off the bunk and went over to the wash-basin and set about cleaning himself. On top of the chest of drawers was a neat pile of his personal belongings. Everything was there except his gun. Bond stowed the things away in his pockets, and sat down again on the bunk and smoked and thought. His thoughts were totally inconclusive. He was being taken for a ride, or rather a sail, but from the behaviour of the sailor it did not seem that he was regarded as an enemy. Yet a great deal of trouble had been taken to make him prisoner and one of Colombo's men had even, though inadvertently, died in the process. It did not seem to be just a question of killing him. Perhaps this soft treatment was the preliminary to trying to make a deal with him. What was the deal—and what was the alternative?

At nine o'clock the same sailor came for Bond and led him down a short passage to a small, blowzy saloon, and left him. There was a table and two chairs in the middle of the room, and beside the table a nickel-plated trolley laden with food and drinks. Bond tried the hatchway at the end of the saloon. It was bolted. He unlatched one of the portholes and looked out. There was just enough light to see that the ship was about two hundred tons and might once have been a large fishing-vessel. The engine sounded like a single diesel and they were carrying sail. Bond estimated the ship's speed at six or seven knots. On the dark horizon there was a tiny cluster of yellow lights. It seemed probable that they were sailing down the Adriatic coast.

The hatchway bolt rattled back. Bond pulled in his head. Colombo came down the steps. He was dressed in a sweat-shirt, dungarees and scuffed sandals. There was a wicked, amused gleam in his eyes. He sat down in one chair and waved to the other. 'Come, my friend. Food and drink and plenty of talk. We will now stop behaving like little boys and be grown-up. Yes? What will you have—gin, whisky, champagne? And this is the finest sausage in the whole of Bologna. Olives from my own estate. Bread, butter, Provelone—that is smoked cheese—and fresh figs. Peasant food, but good. Come. All that running must have given you an appetite.'

His laugh was infectious. Bond poured himself a stiff whisky and soda, and sat down. He said: 'Why did you have to go to so much trouble? We could have met without all these dramatics. As it is you have prepared a lot of grief for yourself. I warned my chief that something like this might happen—the

way the girl picked me up in your restaurant was too childish for words. I said that I would walk into the trap to see what it was all about. If I am not out of it again by tomorrow midday, you'll have Interpol as well as the Italian police on top of you like a load of bricks.'

Colombo looked puzzled. He said: 'If you were ready to walk into the trap, why did you try and escape from my men this afternoon? I had sent them to fetch you and bring you to my ship, and it would all have been much more friendly. Now I have lost a good man and you might easily have had your skull broken. I do not understand.'

'I didn't like the look of those three men. I know killers when I see them. I thought you might be thinking of doing something stupid. You should have used the girl. The men were unnecessary.'

Colombo shook his head. 'Lisl was willing to find out more about you, but nothing else. She will now be just as angry with me as you are. Life is very difficult. I like to be friends with everyone, and now I have made two enemies in one afternoon. It is too bad.' Colombo looked genuinely sorry for himself. He cut a thick slice of sausage, impatiently tore the rind off it with his teeth and began to eat. While his mouth was still full he took a glass of champagne and washed the sausage down with it. He said, shaking his head reproachfully at Bond: 'It is always the same, when I am worried I have to eat. But the food that I eat when I am worried I cannot digest. And now you have worried me. You say that we could have met and talked things over—that I need not have taken all this trouble.' He spread his hands helplessly. 'How was I to know

that? By saying that, you put the blood of Mario on my hands. I did not tell him to take a short cut through that place.’ Colombo pounded the table. Now he shouted angrily at Bond. ‘I do not agree that this was all my fault. It was your fault. Yours only. You had agreed to kill me. How does one arrange a friendly meeting with one’s murderer? Eh? Just tell me that.’ Colombo snatched up a long roll of bread and stuffed it into his mouth, his eyes furious.

‘What the hell are you talking about?’

Colombo threw the remains of the roll on the table and got to his feet, holding Bond’s eyes locked in his. He walked sideways, still gazing fixedly at Bond, to a chest of drawers, felt for the knob of the top drawer, opened it, groped and lifted out what Bond recognized as a tape-recorder playback machine. Still looking accusingly at Bond, he brought the machine over to the table. He sat down and pressed a switch.

When Bond heard the voice he picked up his glass of whisky and looked into it. The tinny voice said: ‘Exact. Now, before I give you the informations, like good commercials we make the terms. Yes?’ The voice went on: ‘Ten thousand dollars American ... There is no telling where you get these informations from. Even if you are beaten ... The head of this machina is a bad man. He is to be destrutto—killed.’ Bond waited for his own voice to break through the restaurant noises. There had been a long pause while he thought about the last condition. What was it he had said? His voice came out of the machine, answering him. ‘I cannot promise that. You must see that. All I can say is that if the man tries to destroy me, I will destroy him.’

Colombo switched off the machine. Bond swallowed down his whisky. Now he could look up at Colombo. He said defensively: 'That doesn't make me a murderer.'

Colombo looked at him sorrowfully. 'To me it does. Coming from an Englishman. I worked for the English during the War, in *the Resistance*. I have the King's Medal.' He put his hand in his pocket and threw the silver Freedom medal with the red, white and blue striped ribbon on to the table. 'You see?'

Bond obstinately held Colombo's eyes. He said: 'And the rest of the stuff on that tape? You long ago stopped working for the English. Now you work against them, for money.'

Colombo grunted. He tapped the machine with his forefinger. He said impassively: 'I have heard it all. It is lies.' He banged his fist on the table so that the glasses jumped. He bellowed furiously: 'It is lies, lies. Every word of it.' He jumped to his feet. His chair crashed down behind him. He slowly bent and picked it up. He reached for the whisky bottle and walked round and poured four fingers into Bond's glass. He went back to his chair and sat down and put the champagne bottle on the table in front of him. Now his face was composed, serious. He said quietly: 'It is not all lies. There is a grain of truth in what that bastard told you. That is why I decided not to argue with you. You might not have believed me. You would have dragged in the police. There would have been much trouble for me and my comrades. Even if you or someone else had not found reason to kill me, there would have been

scandal, ruin. Instead I decided to show you the truth—the truth you were sent to Italy to find out. Within a matter of hours, tomorrow at dawn, your mission will have been completed.’ Colombo clicked his fingers. ‘Presto—like that.’

Bond said: ‘What part of Kristatos’s story is not lies?’

Colombo’s eyes looked into Bond’s, calculating. Finally he said: ‘My friend, I am a smuggler. That part is true. I am probably the most successful smuggler in the Mediterranean. Half the American cigarettes in Italy are brought in by me from Tangier. Gold? I am the sole supplier of the black valuta market. Diamonds? I have my own purveyor in Beirut with direct lines to Sierra Leone and South Africa. In the old days, when these things were scarce, I also handled aureomycin and penicillin and such medicines. Bribery at the American base hospitals. And there have been many other things—even beautiful girls from Syria and Persia for the houses of Naples. I have also smuggled out escaped convicts. But,’ Colombo’s fist crashed on the table, ‘drugs, heroin, opium, hemp—no! Never! I will have nothing to do with these things. These things are evil. There is no sin in the others.’ Colombo held up his right hand. ‘My friend, this I swear to you on the head of my mother.’

Bond was beginning to see daylight. He was prepared to believe Colombo. He even felt a curious liking for this greedy, boisterous pirate who had so nearly been put on the spot by Kristatos. Bond said: ‘But why did Kristatos put the finger on you? What’s he got to gain?’

Colombo slowly shook a finger to and fro in front of his nose. He said: ‘My friend, Kristatos is Kristatos. He is playing the biggest double game it is possible to conceive. To keep it up—to keep the protection of American Intelligence and their Narcotics people—he must now and then throw them a victim—some small man on the fringe of the big game. But with this English problem it is different. That is a huge traffic. To protect it, a big victim was required. I was chosen—by Kristatos, or by his employers. And it is true that if you had been vigorous in your investigations and had spent enough hard currency on buying information, you might have discovered the story of my operations. But each trail towards _me_ would have led you further away from the truth. In the end, for I do not underestimate your Service, I would have gone to prison. But the big fox you are after would only be laughing at the sound of the hunt dying away in the distance.’

‘Why did Kristatos want you killed?’

Colombo looked cunning. ‘My friend, I know too much. In the fraternity of smugglers, we occasionally stumble on a corner of the next man’s business. Not long ago, in this ship, I had a running fight with a small gunboat from Albania. A lucky shot set fire to their fuel. There was only one survivor. He was persuaded to talk. I learnt much, but like a fool I took a chance with the minefields and set him ashore on the coast north of Tirana. It was a mistake. Ever since then I have had this bastard Kristatos after me. Fortunately,’ Colombo grinned wolfishly, ‘I have one piece of information he does not know of. And we have a rendezvous with this piece of information at first light tomorrow—at a small fishing-port just north of Ancona, Santa Maria.

And there,' Colombo gave a harsh, cruel laugh, 'we shall see what we shall see.'

Bond said mildly: 'What's your price for all this? You say my mission will have been completed tomorrow morning. How much?'

Colombo shook his head. He said indifferently: 'Nothing. It just happens that our interests coincide. But I shall need your promise that what I have told you this evening is between you and me and, if necessary, your Chief in London. It must never come back to Italy. Is that agreed?'

'Yes. I agree to that.'

Colombo got to his feet. He went to the chest of drawers and took out Bond's gun. He handed it to Bond. 'In that case, my friend, you had better have this, because you are going to need it. And you had better get some sleep. There will be rum and coffee for everyone at five in the morning.' He held out his hand. Bond took it. Suddenly the two men were friends. Bond felt the fact. He said awkwardly 'All right, Colombo,' and went out of the saloon and along to his cabin.

The *Colombina* had a crew of twelve. They were youngish, tough-looking men. They talked softly among themselves as the mugs of hot coffee and rum were dished out by Colombo in the saloon. A storm lantern was the only

light—the ship had been darkened—and Bond smiled to himself at the Treasure Island atmosphere of excitement and conspiracy. Colombo went from man to man on a weapon inspection. They all had Lugers, carried under the jersey inside the trouser-band, and flick-knives in the pocket. Colombo had a word of approval or criticism for each weapon. It struck Bond that Colombo had made a good life for himself—a life of adventure and thrill and risk. It was a criminal life—a running fight with the currency laws, the State tobacco monopoly, the Customs, the police—but there was a whiff of adolescent rascality in the air which somehow changed the colour of the crime from black to white—or at least to grey.

Colombo looked at his watch. He dismissed the men to their posts. He dowsed the lantern and, in the oyster light of dawn, Bond followed him up to the bridge. He found the ship was close to a black, rocky shore which they were following at reduced speed. Colombo pointed ahead. ‘Round that headland is the harbour. Our approach will not have been observed. In the harbour, against the jetty, I expect to find a ship of about this size unloading innocent rolls of newsprint down a ramp into a warehouse. Round the headland, we will put on full speed and come alongside this ship and board her. There will be resistance. Heads will be broken. I hope it is not shooting. We shall not shoot unless they do. But it will be an Albanian ship manned by a crew of Albanian toughs. If there is shooting, you must shoot well with the rest of us. These people are enemies of your country as well as mine. If you get killed, you get killed. Okay?’

‘That’s all right.’

As Bond said the words, there came a ting on the engine-room telegraph and the deck began to tremble under his feet. Making ten knots, the small ship rounded the headland into the harbour.

It was as Colombo had said. Alongside a stone jetty lay the ship, its sails flapping idly. From her stern a ramp of wooden planks sloped down towards the dark mouth of a ramshackle corrugated iron warehouse, inside which burned feeble electric lights. The ship carried a deck cargo of what appeared to be rolls of newsprint, and these were being hoisted one by one on to the ramp whence they rolled down under their own momentum through the mouth of the warehouse. There were about twenty men in sight. Only surprise would straighten out these odds. Now Colombo's craft was fifty yards away from the other ship, and one or two of the men had stopped working and were looking in their direction. One man ran off into the warehouse. Simultaneously Colombo issued a sharp order. The engines stopped and went into reverse. A big searchlight on the bridge came on and lit the whole scene brightly as the ship drifted up alongside the Albanian trawler. At the first hard contact, grappling-irons were tossed over the Albanian's rail fore and aft, and Colombo's men swarmed over the side with Colombo in the lead.

Bond had made his own plans. As soon as his feet landed on the enemy deck, he ran straight across the ship, climbed the far rail and jumped. It was about twelve feet to the jetty and he landed like a cat, on his hands and toes, and stayed for a moment, crouching, planning his next move. Shooting had already started on deck. An early shot killed the searchlight and now there was

only the grey, luminous light of dawn. A body, one of the enemy, crunched to the stone in front of him and lay spread-eagled, motionless. At the same time, from the mouth of the warehouse, a light machine-gun started up, firing short bursts with a highly professional touch. Bond ran towards it in the dark shadow of the ship. The machine-gunner saw him and gave him a burst. The bullets zipped round Bond, clanged against the iron hull of the ship and whined off into the night. Bond got to the cover of the sloping ramp of boards and dived forward on his stomach. The bullets crashed into the wood above his head. Bond crept forward into the narrowing space. When he had got as close as he could, he would have a choice of breaking cover either to right or left of the boards. There came a series of heavy thuds and a swift rumble above his head. One of Colombo's men must have cut the ropes and sent the whole pile of newsprint rolls down the ramp. Now was Bond's chance. He leapt out from under cover—to the left. If the machine-gunner was waiting for him, he would expect Bond to come out firing on the right. The machine-gunner was there, crouching up against the wall of the warehouse. Bond fired twice in the split second before the bright muzzle of the enemy weapon had swung through its small arc. The dead man's finger clenched on the trigger and, as he slumped, his gun made a brief Catherine-wheel of flashes before it shook itself free from his hand and clattered to the ground.

Bond was running forward towards the warehouse door when he slipped and fell headlong. He lay for a moment, stunned, his face in a pool of black treacle. He cursed and got to his hands and knees and made a dash for cover behind a jumble of the big newsprint rolls that had crashed into the wall of the warehouse. One of them, sliced by a burst from the machine-gun, was leaking

black treacle. Bond wiped as much of the stuff off his hands and face as he could. It had the musty sweet smell that Bond had once smelled in Mexico. It was raw opium.

A bullet whanged into the wall of the warehouse not far from his head. Bond gave his gun-hand a last wipe on the seat of his trousers and leapt for the warehouse door. He was surprised not to be shot at from the interior as soon as he was silhouetted against the entrance. It was quiet and cool inside the place. The lights had been turned out, but it was now getting brighter outside. The pale newsprint rolls were stacked in orderly ranks with a space to make a passage-way down the centre. At the far end of the passage-way was a door. The whole arrangement leered at him, daring him. Bond smelled death. He edged back to the entrance and out into the open. The shooting had become spasmodic. Colombo came running swiftly towards him, his feet close to the ground as fat men run. Bond said peremptorily: 'Stay at this door. Don't go in or let any of your men in. I'm going round to the back.' Without waiting for an answer he sprinted round the corner of the building and down along its side.

The warehouse was about fifty feet long. Bond slowed and walked softly to the far corner. He flattened himself against the corrugated iron wall and took a swift look round. He immediately drew back. A man was standing up against the back entrance. His eyes were at some kind of a spyhole. In his hand was a plunger from which wires ran under the bottom of the door. A car, a black Lancia Granturismo convertible with the hood down, stood beside him, its engine ticking over softly. It pointed inland along a deeply tracked dust road.

The man was Kristatos.

Bond knelt. He held his gun in both hands for steadiness, inched swiftly round the corner of the building and fired one shot at the man's feet. He missed. Almost as he saw the dust kick up inches off the target, there was the rumbling crack of an explosion and the tin wall hit him and sent him flying.

Bond scrambled to his feet. The warehouse had buckled crazily out of shape. Now it started to collapse noisily like a pack of tin cards. Kristatos was in the car. It was already twenty yards away, dust fountaining up from the traction on the rear wheels. Bond stood in the classic pistol-shooting pose and took careful aim. The Walther roared and kicked three times. At the last shot, at fifty yards, the figure crouched over the wheel jerked backwards. The hands flew sideways off the wheel. The head craned briefly into the air and slumped forward. The right hand remained sticking out as if the dead man was signaling a right-hand turn. Bond started to run up the road, expecting the car to stop, but the wheels were held in the ruts and, with the weight of the dead right foot still on the accelerator, the Lancia tore onwards in its screaming third gear. Bond stopped and watched it. It hurried on along the flat road across the burned-up plain and the cloud of white dust blew gaily up behind. At any moment Bond expected it to veer off the road, but it did not, and Bond stood and saw it out of sight into the early morning mist that promised a beautiful day.

Bond put his gun on safe and tucked it away in the belt of his trousers. He turned to find Colombo approaching him. The fat man was grinning delightedly. He came up with Bond and, to Bond's horror, threw open his arms, clutched Bond to him and kissed him on both cheeks.

Bond said: 'For God's sake, Colombo.'

Colombo roared with laughter. 'Ah, the quiet Englishman! He fears nothing save the emotions. But me,' he hit himself in the chest, 'me, Enrico Colombo, loves this man and he is not ashamed to say so. If you had not got the machine-gunner, not one of us would have survived. As it is, I lost two of my men and others have wounds. But only half a dozen Albanians remain on their feet and they have escaped into the village. No doubt the police will round them up. And now you have sent that bastard Kristatos motoring down to hell. What a splendid finish to him! What will happen when the little racing-hearse meets the main road? He is already signalling for the right-hand turn on to the autostrada. I hope he will remember to drive on the right.' Colombo clapped Bond boisterously on the shoulder. 'But come, my friend. It is time we got out of here. The cocks are open in the Albanian ship and she will soon be on the bottom. There are no telephones in this little place. We will have a good start on the police. It will take them some time to get sense out of the fishermen. I have spoken to the head man. No one here has any love for Albanians. But we must be on our way. We have a stiff sail into the wind and there is no doctor I can trust this side of Venice.'

Flames were beginning to lick out of the shattered warehouse, and there was billowing smoke that smelled of sweet vegetables. Bond and Colombo walked round to windward. The Albanian ship had settled on the bottom and her decks were awash. They waded across her and climbed on board the *Colombina*, where Bond had to go through some more handshaking and backslapping. They cast off at once and made for the headland guarding the harbour. There was a small group of fishermen standing by their boats that lay drawn up on the beach below a huddle of stone cottages. They made a surly impression, but when Colombo waved and shouted something in Italian most of them raised a hand in farewell, and one of them called back something that made the crew of the *Colombina* laugh. Colombo explained: ‘They say we were better than the cinema at Ancona and we must come again soon.’

Bond suddenly felt the excitement drain out of him. He felt dirty and unshaven, and he could smell his own sweat. He went below and borrowed a razor and a clean shirt from one of the crew, and stripped in his cabin and cleaned himself. When he took out his gun and threw it on the bunk he caught a whiff of cordite from the barrel. It brought back the fear and violence and death of the grey dawn. He opened the porthole. Outside, the sea was dancing and gay, and the receding coastline, that had been black and mysterious, was now green and beautiful. A sudden delicious scent of frying bacon came down-wind from the galley. Abruptly Bond pulled the porthole to and dressed and went along to the saloon.

Over a mound of fried eggs and bacon washed down with hot sweet coffee laced with rum, Colombo dotted the i’s and crossed the t’s.

‘This we have done, my friend,’ he said through crunching toast. ‘That was a year’s supply of raw opium on its way to Kristatos’s chemical works in Naples. It is true that I have such a business in Milan and that it is a convenient depot for some of my wares. But it fabricates nothing more deadly than cascara and aspirin. For all that part of Kristatos’s story, read Kristatos instead of Colombo. It is he who breaks the stuff down into heroin and it is he who employs the couriers to take it to London. That huge shipment was worth perhaps a million pounds to Kristatos and his men. But do you know something, my dear James? It cost him not one solitary cent. Why? Because it is a gift from Russia. The gift of a massive and deadly projectile to be fired into the bowels of England. The Russians can supply unlimited quantities of the charge for the projectile. It comes from their poppy-fields in the Caucasus, and Albania is a convenient entrepôt. But they have not the apparatus to fire this projectile. The man Kristatos created the necessary apparatus, and it is he, on behalf of his masters in Russia, who pulls the trigger. Today, between us, we have destroyed, in half an hour, the entire conspiracy. You can now go back and tell your people in England that the traffic will cease. You can also tell them the truth—that Italy was not the origin of this terrible underground weapon of war. That it is our old friends the Russians. No doubt it is some psychological warfare section of their Intelligence apparatus. That I cannot tell you. Perhaps, my dear James,’ Colombo smiled encouragingly, ‘they will send you to Moscow to find out. If that should happen, let us hope you will find some girl as charming as your friend Fräulein Lisl Baum to put you on the right road to the truth.’

‘What do you mean “my friend”? She’s yours.’

Colombo shook his head. ‘My dear James, I have many friends. You will be spending a few more days in Italy writing your report, and no doubt,’ he chuckled, ‘checking on some of the things I have told you. Perhaps you will also have an enjoyable half an hour explaining the facts of life to your colleagues in American Intelligence. In between these duties you will need companionship—someone to show you the beauties of my beloved homeland. In uncivilized countries, it is the polite custom to offer one of your wives to a man whom you love and wish to honour. I also am uncivilized. I have no wives, but I have many such friends as Lisl Baum. She will not need to receive any instructions in this matter. I have good reason to believe that she is awaiting your return this evening.’ Colombo fished in his trousers pocket and tossed something down with a clang on the table in front of Bond. ‘Here is the good reason.’ Colombo put his hand to his heart and looked seriously into Bond’s eyes. ‘I give it to you from my heart. Perhaps also from hers.’

Bond picked the thing up. It was a key with a heavy metal tag attached. The metal tag was inscribed *Albergo Danielli. Room 68.*

Postscript – The Film For Your Eyes Only

The film *For Your Eyes Only* was perhaps one of the best films starring Roger Moore as James Bond. Prior to taking up this role, Sir Roger Moore played Simon Templar in the British Television series *The Saint*. I rather like the old black and white *The Saint* series and sometimes I download an episode or two and watch it at night.

The film *For Your Eyes Only* is a well written story made up of a number of vignettes written by Fleming. Several stories from the original novel are incorporated in the film script, with some modifications and a few vignettes from other Fleming novels find their way into the film as well.

The two vignettes *For Your Eyes Only* and *Risico* are used as the main story lines in the film. If you recall, in the short story *For Your Eyes Only* Bond avenges the murder of M's closest friends, the Havelocks, by a group of Cubans. Their death is also avenged by the Havelock daughter, as well as by James Bond who happens upon the Havelock girl just as Bond is about to kill her parent's Cuban assassin using a cross bow. In the short story *Risico* Bond investigates a drug-smuggling operation run in the Mediterranean with ties in Italy and Great Britain, with ties to the Soviets. In short story there is mention of Greek islands, smugglers and Albanians.

I have already outlined the Corfu Channel angle to this story. The film in fact begins with a naval mine sinking of a Royal Navy intelligence gathering ship the St. Georges disguised as a fishing trawler. The ship was equipped with a

super-secret strategic targeting encryption machine, the ATAC system (Automatic Targeting Attack Communicator) which the Soviets want to acquire. There is a race to find the sunken ship and recover the ATAC machine. It is a pure Cold War fight between good and evil.

Such a story is reminiscent of many clandestine operations in both the First and Second World War involving the recovery from the ocean floor of top secret materials, including encryption machines and war material.

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For instance, in the First World War there was the recovery of the German Imperial Navy's code books from the ship the *SMS Magdeburg* after an engagement with Russian cruisers off the entrance to the Gulf of Finland on August 26th, 1914. Three entire sets of naval codes were captured off the *SMS Magdeburg* by the Russian Imperial navy and one set shared with the Royal Navy. The secret would get out when Winston Churchill wrote about it in his history of the First World War.

“At the beginning of September, 1914, the German light cruiser *Magdeburg* was wrecked in the Baltic. The body of a drowned German under-officer was picked up by the Russians a few hours later, and clasped in his bosom by arms rigid in death, were the cypher and signal books of the German Navy and the minutely squared maps of the North Sea and Heligoland Bight. On September 6 the Russian Naval attaché came to see me. He had received a message from Petrograd telling him

what had happened, and that the Russian Admiralty with the aid of the cypher and signal books had been able to decode portions at least of the German naval messages. The Russians felt that as the leading naval Power, the British Admiralty ought to have these books and charts. If we would send a vessel to Alexandrov, the Russian officers in charge of the books would bring them to England. We lost no time in sending a ship, and late on an October afternoon Prince Louis [of Battenberg, First Sea Lord] and I received from the hands of our loyal allies these sea-stained priceless documents.”

The story as to how these documents were used by the Royal Navy in the First World War has been told elsewhere. During the First World War the RN also sent divers to U-boat wrecks in the English Channel and around the UK to try to recover the U-boat ciphers. They were modestly successful.

In the Second World War there were greater successes in lifting secret materials from naval wrecks. It is still governed by the Official Secrets Act but I can tell you that the Australian Navy managed to dive on a Japanese submarine early in the war and recover the Imperial Japanese Navy’s JN25 code materials, which they shared with the British and the Americans. This was some weeks prior to Pearl Harbor.

In the film *For Your Eyes Only* there is the use of diving equipment and mini-submarines to effect the salvage from the wreck of the St. Georges of the super-secret encryption machine. There is also a battle between mini-submarines. During the war there was a clandestine battle under the waves

between Italian and Royal Navy frogmen and mini-submariners that saw the Italians successfully attack and cripple RN battleships in Alexandria harbor as well as naval and maritime ships in Gibraltar harbor. I will provide more background about Ian Fleming's role in this clandestine war in the next book in *The Best of Ian Fleming* series when we look at the novel *Thunderball*.

Ian Fleming was involved in a number of clandestine operations to acquire, by hook or by crook, the code and cipher materials of Germany and their Axis allies in Europe (including the Italians), similar materials from the French Armed Forces (before and after their Armistice) as well as the code and cipher materials of Axis sympathisers like the Spaniards and Several south American countries.

For instance there was an operation organized by him to seize a German Navy weather ship in the North Sea, a successful operation that gave the allies a three month peek into German Naval messages and allowed the allies to begin to turn back the tide in the battle of the Atlantic.

In one of the yet secret histories of the Second World War, the Spaniards ran a spy ring for their German and Japanese allies in North America and in Great Britain during the war. They also penetrated the allied atomic secrets as early as 1942. One of Ian Fleming's area of expertise was in Spain and his OPERATION GOLDENEYE was to keep a close watch on the Spaniards and to keep them out of the war and out of Gibraltar. Fleming's OPERATION GOLDENEYE files are still classified.

The most publicized espionage operation undertaken by the Royal Navy against Spain during the war was OPERATION MINCEMEAT where fake plans to invade Greece were washed ashore on the Spanish coastline using a cadaver of a fake Royal Marine officer. This clandestine operation became public in the middle 1950's and it has become one of the classic stories of wartime espionage. Of course ... it goes without saying who the idea for OPERATION MINCEMEAT came from. I will provide more background to this operation in a subsequent book of *The Best of Ian Fleming* series.

In the film *For Your Eyes Only* a vignette from a previous Fleming novel is used when Bond and the heroine are to be towed behind a yacht, drowned and fed to the sharks. If you have read the previous Bond novels you will recognize the vignette from the final part of the novel *Live and Let Die*.

The film *For Your Eyes Only* was released in June, 1981 with an international cast including Roger Moore as 007, Carole Bouquet as Melina Havelock (the Havelock daughter), Julian Glover as the arch villain Kristatos, Topol as Columbo (Bond's eventual allie), as well as a string of minor actors.

The film would bring in around \$ 195 million and would be one of Moore's seven playing of the Bond role.

Being a reserve Royal Canadian Naval Officer at the time I rather enjoyed the naval character to the film *For Your Eyes Only*. It was one of the retired naval officers I met at a naval mess dinner who told me about the Corfu Channel

incident and this being the pre-internet era I had to do a little historical detective work to find the particulars of the 1946 incident.

Then I went back and re-read *For Your Eyes Only*, before seeing the film a second time, this time in my naval uniform in Victoria, BC (up the road from Esquimalt, BC the West Coast naval base of the Royal Canadian Navy). As it would happen, when I tried to buy my ticket the lovely young lady in the ticket kiosk smiled and gave me a pass into the theater, on the proviso we met for coffee after the show. We met for coffee and well we enjoyed some summer pleasure walking together and picnicking at Beaconsfield Park in Victoria.

In terms of the Bond films that came out in the 1980's *For Your Eyes Only* was one of the Bond films I saw for the first time in the theaters. There would be four other Bond films (plus *Never Say Never Again* starring an older Sean Connery from 1983).

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Science and Technology

Anchored in the Solar System: An Interview with Jim Lovell

Captain James A. Lovell, Jr., U.S. Navy (Retired)

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The recipient of the Congressional Space Medal of Honor talked recently with Naval History Editor Fred Schultz and Proceedings Associate Editor Bruce Gibson about the space program in general, the Apollo 13 mission—subject of the popular summer 1995 motion picture starring Tom Hanks as Jim Lovell—and the future of space exploration.

Proceedings: As a Naval Academy graduate, what advice do you give future naval officers who want to go into the space program?

Captain Lovell: When I entered the program, we all had questions about being sidetracked into a quasi-government program that would have nothing to do with naval traditions or naval promotions. I think naval officers ought to have certain experiences and foundations to be career officers, especially if they are going to defend their country.

Having said that, I didn't have many of those, because I went into the space program. But naval officers tend to go into varied fields—more so, I think,

than Army officers. And many naval officers are in government or some aspects of government, and do other things besides command ships. NASA has expanded into several disciplines now. You don't have to be a test pilot anymore. In fact, only two people command the space shuttle itself. All other people are mission specialists of some sort. Several of our astronauts were really not pilots, per se, but were mission specialists. We've even had civilians come in as payload specialists. So I think the space program is still a very viable field and a great career.

I think people who choose naval aviation take on a certain amount of risk, and there is certainly an element of risk in the space program. I don't think it's as great as it once was. The shuttle today is much like getting on an airliner. Occasionally, though, accidents do happen.

Proceedings: What do you think the space program could do differently to attract young people?

Captain Lovell: I think NASA has consistently been accused on doing a poor marketing job. People ask, "Why are we still sending people into space? What benefit did we get from the Apollo program? Why did we spend all that money away from the earth?" Well, in actuality, we spent all the money on the earth. But that message has not come across well. I think NASA should emphasize the advantages of having an active U.S. space program.

Right now, we are no longer threatened by the great Evil Empire, and to some degree that's bad news for us who try to justify space travel. Keeping up with the Soviets was a great incentive. It was intense competition, and we love competition. As a matter of fact, we were underdogs for a long time. In reality, that was a good thing, because it spurred our Apollo program.

But we don't have that now. What we do have, however, is cooperation. Several countries are knitted together with the common goal of an international space station. We have a method of communication among countries on a subject surrounded by little or no controversy. Many questions remain, of course—how big it should be and who should spend the money—but it's not that controversial. And such exchanges create a rapport and lay the groundwork for interaction between countries in other fields, because a camaraderie has already been established, without boundaries. Those are intangible benefits of an active space program that Congress sometimes misses when the time comes to approach funds year by year. Our lawmakers fluctuate, depending on which way the winds are blowing politically, without really looking at the big picture. The space program yields intangible benefits, and that story needs to be told.

Proceedings: It seems that our new relationship with Russia has not been publicized as much as some of the other aspects of the space program. Why would you say that is?

Captain Lovell: Certainly, docking with the Mir was a very important milestone for NASA, but it was not a milestone in the eyes of the American

public like landing on the moon. This is earth orbital. We've been doing earth orbital stuff since Mercury and Gemini, and we've had more than 70 shuttle missions now.

We have to realize that this program, like most programs, has matured. The Russians have a tremendous amount of talent. They spent most of their money in the past either in space or on the military, to the detriment of everything else. So it would be foolish not to tap their experience and knowledge. And if we're going to spend a lot of money to help them, we ought to get something back for it.

As for publicity and exposure, it's just a matter of time. The more things we do together, the more stories about them will find their way into the papers. Knowledge will ultimately get back to the public, which I think will be more responsive.

Because of the book [Lost Moon (New York: Houghton Mifflin Co., 1994)] and, more so, the movie ["Apollo 13"], I found out just recently that the silent majority in this country, the people who obviously don't write to their congressmen, are in favor of the space program.

A lot of people I talk to now weren't even born when I flew. Anybody younger than 25 years old wasn't around for Apollo 13. But I find they still are interested. They learn about it in school. A perfect and very visible example is a guy by the name of Tom Hanks. He was a closet astronaut. He really wanted to get into space, knew the names of all the astronauts, all the

space flights. When he finally got in the acting business, he wanted to play an astronaut. He finally got his chance.

Proceedings: President John F. Kennedy's rallying cry to land on the moon seemed to unite all Americans in that pursuit. If the same challenge were set forth today regarding Mars, for example, what do you think the ultimate response would be?

Captain Lovell: Well, in reality, it was set forth. Back on the 20th anniversary of Apollo 11 in Washington, President [George] Bush did set somewhat of a goal for going to Mars. But it was not the same rallying cry that President Kennedy had made. I'm fully convinced Kennedy made that statement because of the political situation he faced at that particular time. The Soviet Union obviously had an edge on us scientifically, and we were asking ourselves why we didn't have an educational system that produced people who could do what the Russians were doing.

So President Kennedy had to make a very bold move, and this was one way he saw that he could do it. It really is a shame that he did not live to see his goal accomplished. I think he probably had doubts that this would actually come to pass, but in 1961 he had to give Americans something to look forward to, a goal that would be unique.

Proceedings: It may take a political competitor to get us in that mind-set again.

Captain Lovell: We also need a Congress and public that say this is what we ought to do. Nothing today would prevent us from going to Mars, nothing technical, at least. The Russians have had people in space now for well over a year, working out the procedures to keep the people healthy, but not so much to go to Mars; it's to come back to the earth and live under the influence of gravity again.

But all it takes is effort, time, and money to do the job. All the systems active today can be used to go to Mars.

Proceedings: We just need the check.

Captain Lovell: Yes, we need the money and the will to do it. Right now, we're concentrating on the space station, which has, I think, important applications in the diplomatic as well as the technical arena.

Proceedings: Two schools of thought seem to prevail concerning the future of space exploration. Some say that, since we've been to the moon, we should focus our efforts more outward to other planets. Others say there is more to do on the moon, specifically, that we should land on the moon again to gain public support to go elsewhere. We have also heard discussions of colonizing the moon. What are your thoughts on that?

Captain Lovell: The studies I've seen indicate that the moon can possibly be used as a training base for a Martian mission. Which of the two schools of thought has more merit depends on what set of scientists you listen

to. Geologists were very disappointed when Apollo 18 and 19 were canceled. Some people in NASA, basically the engineering types, wanted to cancel the program after Apollo 11.

Then there are the scientists who say that we have to find out more about the solar system and do probes to the other planets, and to the satellites of other planets. These two groups are at odds, and many of the differing opinions involved robotics. “We don’t need people for these missions,” some say. “Let’s concentrate our existing funds on unmanned, robotic systems. Then if we lose them, it’s not a traumatic situation.”

That argument will continue. We’ll probably reach a compromise at some point. I think we will go back to the moon, but not before the next century. Right now, the only way we can sell Congress is to show a return on the investment. This is how the shuttle came into being. Originally, it was only one part of a two-pronged space effort; one was the shuttle and the other was the space station. The shuttle was merely the transportation device to travel to the space station. At that time, Congress was not about to fund two programs, so our lawmakers elected to build the shuttle first and the space station later.

The time for the space station has come. From a macro position in space, we will learn more about the earth and bring a quicker return on the investment. A lot of people cannot understand the point of going to the moon. We brought back moon rocks, and 20-some years later we are examining them, trying to

figure out what we have. They probably raised as many questions as they answered. It's amazing.

Proceedings: During the Apollo 13 mission, you must have experienced a feeling of detachment from earth, which would certainly be inevitable on a mission to Mars. Do you think the phenomenon will be a factor in such far-flung missions?

Captain Lovell: I don't really believe that to be as much of a problem as a lot of people have surmised. I recall flying an F8U before I got to NASA. For the very first time we were wearing the early Navy pressure suits that would inflate if we lost pressure above 50,000 feet. The Navy psychiatrists at that time started doing studies on detachment. They concentrated on what happens above 50,000 and 60,000 feet. Would you suddenly feel detached from the earth, much like a diver who experiences rapture of the depth and doesn't realize how long he's been down—or which way is up—and suddenly either doesn't care or gets so enamored with what's going on that he forgets the situation?

Well, nothing like that ever happened flying airplanes. Then we started going into earth orbit. NASA, among other things, had a lot of faith in psychiatrists. They invited several to interview us after we came back from our flights. They would send the psychiatrists out to the ship, and as soon as we came on board they would start interviewing us subtly to see if we had any problems. I can recall one instance after Gemini 12, when I was in the wardroom having lunch. A psychiatrist was sitting directly across from

me. By this time, with my two flights, I had logged 440 hours, which was more time in space than anybody in the world. So I happened to know why this fellow was watching me. Myself, I was just happy to be back on earth. As I was explaining some of the things we did and saw, I had one of those heavy Navy wardroom forks in my hand. I waved it up in the air—and left it up there. I had done that for 440 hours.

Proceedings: It didn't stay there, did it?

Captain Lovell: No! It came crashing down onto the table. You should have seen the eyes of the psychiatrist. Boy, they really lit up. But he had a smile on his face. He'd finally found something to report.

We never really experienced anything I would refer to as detachment in earth orbit. We never felt any detachment in my two flights to the moon. On Apollo 8, up to when we cut the engine and were anchored to the moon, we did hope, in the back of our minds, that the engine would fire again. Otherwise, we would have been a satellite of the moon—permanently. But that's the risk you take. It's no different from being launched off an aircraft carrier and you get a cold cat shot.

I don't think detachment will be a factor in going to Mars. Based on time, the size of the ships, and how acclimated one can get to life in space, missions to Mars or Venus and other solar system trips will be possible. Of course, you can't land on Venus, but you can go around it. You'd never be able to get to the nearest star, which is Alpha Centauri—four light years away. If ever we

can figure out how to travel 186,000 miles a second, it would take us four years to get there.

Proceedings: We're not at Star Trek yet.

Captain Lovell: That's right. Einstein said that, as time slows down, mass increases. If we ever got a chance to come back, the earth would have changed millions of years. Nothing would be the same. So I think we're anchored here in the solar system.

Proceedings: Getting back to robotics, what role will humans play in the future? Can we do it all with robotics?

Captain Lovell: We can do a lot with robotics, no doubt about it. In fact, I think the Naval Research Lab is making a very simple, inexpensive probe for either the moon or Mars. But I don't think anyone has developed a computer as inexpensive and complicated as the human brain. When things don't work as they're supposed to work, as happened on Apollo 13, human beings are still part of the loop and are very, very important.

I don't think we'll ever lose the human desire for adventure and exploration into the Last Frontier—space. People are going to be there whether it's financially expedient or not or whether it's worthwhile or not.

Proceedings: Without that excitement, getting public support will be a challenge.

Captain Lovell: Yes, without people involved, the public doesn't get much enamored with the program.

Proceedings: Were you aware that people on earth were hanging on every report on what you guys were doing in Apollo 13?

Captain Lovell: No. We got our communications strictly through the capsule communicator. Even when we landed, the recovery ship had been out to sea for about a week. Not until we got back to Hawaii did the tremendous impact of this flight begin to dawn on us. Of course, I made one of the traditional goofs. We were on vox—hot mike—when I said, “It will be a long time before we have another moon mission,” or something to that effect.

Of course, it took the poor administrator a couple of days to convince the news media that, “what he really means is...” When I got back, I was confronted with the same thing; that was always the first question.

Proceedings: The film “Apollo 13” should impel a lot of excitement—not short-lived excitement, let's hope—with the public.

Captain Lovell: Even though I was worried at first, I was happy with the way it turned out. Ron Howard did a great job of directing. When he approached me about doing a movie based on the book, I told him that the ABC television network produced a docudrama in 1971 called, “Houston, We Have a Problem.” They used Apollo 13 as a backdrop, but they focused on four

fictitious flight controllers. That was the main story. One of them had marital troubles, one of them had child-support problems, one of them had a heart attack, and the fourth one's grandfather died.

I told them they ruined a good story. It had nothing to do with Apollo 13, even though the real story had all the drama required to make a good TV program. They didn't have to make up that stuff. I wrote scathing letters to ABC and to NASA for allowing them to use the facilities. When Ron Howard approached me, I told him to look at the ABC program first. "If you're going to do the same thing," I said, "forget me, because I don't want to be any part of it."

Proceedings: The big question for many viewers was, "If I know how it ends, how can I stay interested?"

Captain Lovell: He did a great job of keeping the suspense going, and all the incidents in that movie are true. He didn't have to hype anything. His main job, his main concern, was, "What do I throw out?" When he did the first edit, he had a four-hour movie. Universal said, "No way are we going to have a four-hour movie." So he got it all down to a two-hour-and-15-minute movie. That's why I tell people that they'll appreciate the movie more if they read the book first.

Proceedings: As far as the general public is concerned, do you have any concern that the movie itself will become the historical record?

Captain Lovell: Well, there's always that chance, just like the movie "Patton." When you think of General George Patton, what image comes to mind? George C. Scott, right? I've kidded Tom Hanks, saying, "Look, you'd better start learning how to write my name, because when all these photographs come for signatures, I'm sending them to you."

To answer your question, if it has positive results, a positive influence, I couldn't care less.

Proceedings: At least the story is out there.

Captain Lovell: The true story is out there. That's the reason why I wrote the book. I was very fortunate to get a great co-author, Jeff Kluger, who had never written a book before. I had never written one, either. We both wrote technical journals, but he worked for Discover magazine and had a degree in journalism. He wrote to me to say he wanted to write a book on Apollo 13. I said that I wanted to do it, too, and that we should do it together. That's how it came to pass.

Proceedings: In the book, you and Mr. Kluger give high praise to Jules Bergman at ABC News for going through some of the training that the astronauts went through and for being empathetic to what it was you were doing. What did you think of the general news coverage back then, and what do you think of it now in comparison?

Captain Lovell: I thought the news coverage in those days was very positive. My wife Marilyn won't give the same accolades to Jules Bergman, only because he was, after all, a newsman. Apollo 13 was Doomsday for Jules—only a 10% chance of getting back, the whole business. But he did go through all the training to be fully up to speed. Marilyn would rather have listened to Walter Cronkite, who had a more fatherly approach to everything.

I think they're covering it pretty well today, too. But you have to realize that human nature says that repetition means people get complacent, and people got complacent about Apollo 13. This was the third lunar-landing mission, but none of the networks carried it. The movie showed some of the subtle things—guys yawning, one of the guys looking at the baseball game on the side. They were all waiting to shut down for the night, because we were going to go to sleep. It was just another day at the office.

Today, with more than 70 shuttle flights, I don't think one network carries shuttle launches. Maybe CNN does, because they think they have an "in" if something goes wrong. For the Challenger accident, they were right there. If something unique happens, like the Mir docking, they will cover it. And that was, I think, adequately covered. The Hubble telescope repair also got some coverage. These are all great events. The public just doesn't understand. It was the same way with Apollo 13. For many years people did not appreciate what really went on to get the spacecraft back home again. I think a lot of people don't understand the successful docking between an ancient space station and a shuttle, or the repair of a telescope out in space, or the capture of

a satellite. Again, these are good examples of humans taking over when robots were incapable of getting the job done.

Proceedings: Do you think we have too many scientists and not enough aviator types? Do the astronauts today, pardon the phrase, have the “right stuff?”

Captain Lovell: I wouldn’t want to separate between scientists and aviators. I think the people who go into the program—whether they are geologists, physicists, doctors, or pilots—all need a certain amount of adventuresome, risk-taking spirit. They’ve got to be pioneers, regardless of what their discipline is. We don’t need people who know just how to fly airplanes. We do need people who can adapt to an ancient Mir space station and to eating Russian food. They’ve got to learn to be survivors.

Proceedings: It’s our custom to give our interviewees a parting shot. Here’s your chance to address anything we have not covered.

Captain Lovell: I have a couple of things. Number one is the fact that I am very proud to be part of the naval establishment. I think the Navy in all aspects has provided a foundation for space activities in this country. I think our space program, however it forms in the future, will be an important factor in the overall operation of this country.

NASA has the ability to create new technologies. It creates new industries and new products. And it is very much a diplomatic tool.

I recall vividly, when Sputnik was launched, the great outcry questioning why we did not have an adequate system to do the same thing. It was that way for a long time. I think the majority of the people today feel that NASA still plays an important role in the U.S. government's efforts to keep this country a leader. So I hope Congress realizes that, and the administration realizes that, so they can stop quibbling year in and year out and vacillating so much that we don't have a clear direction for what we should be doing in the future.



Capt. Jim Lovell in front of Apollo 10 spacecraft

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